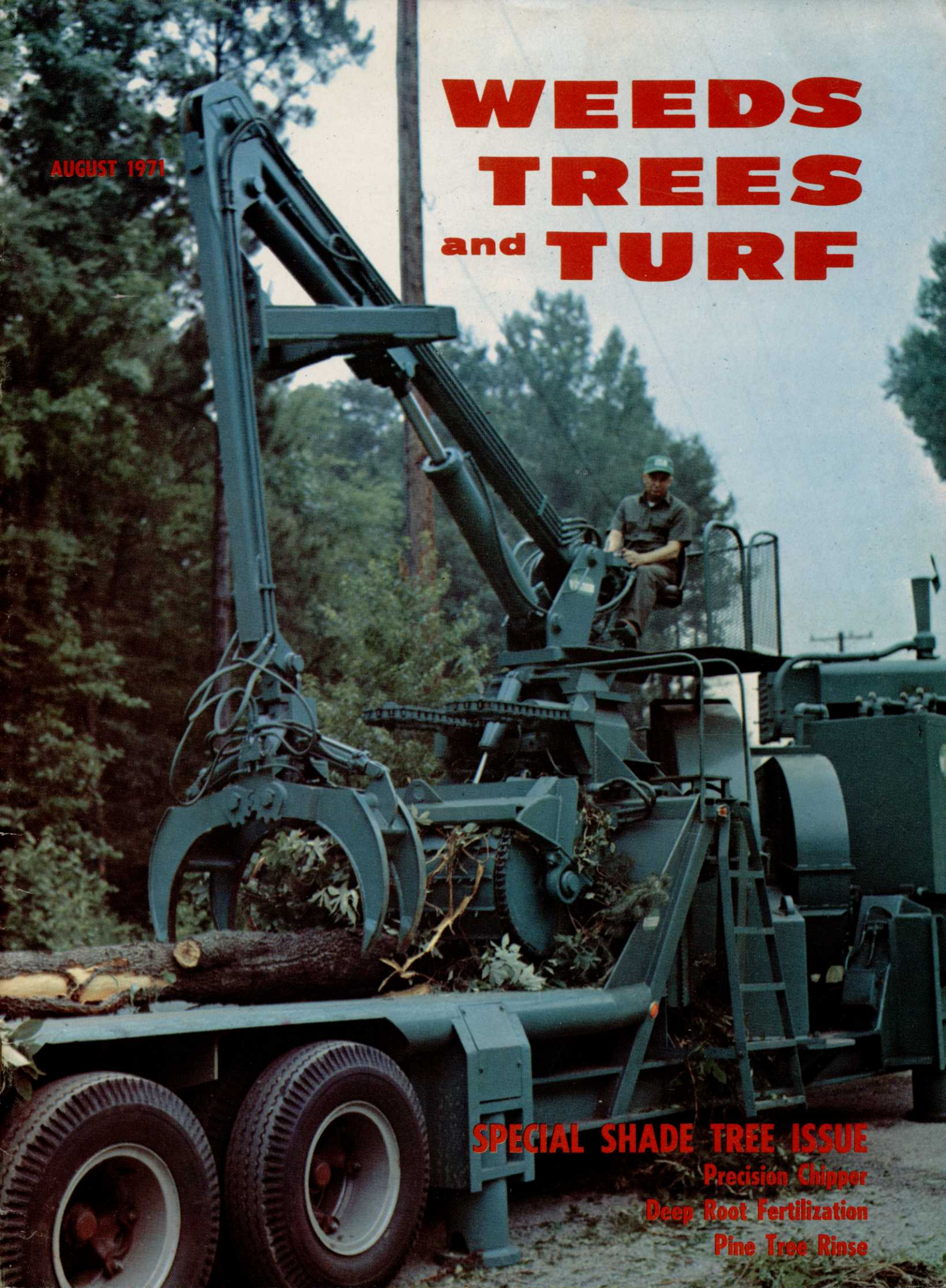
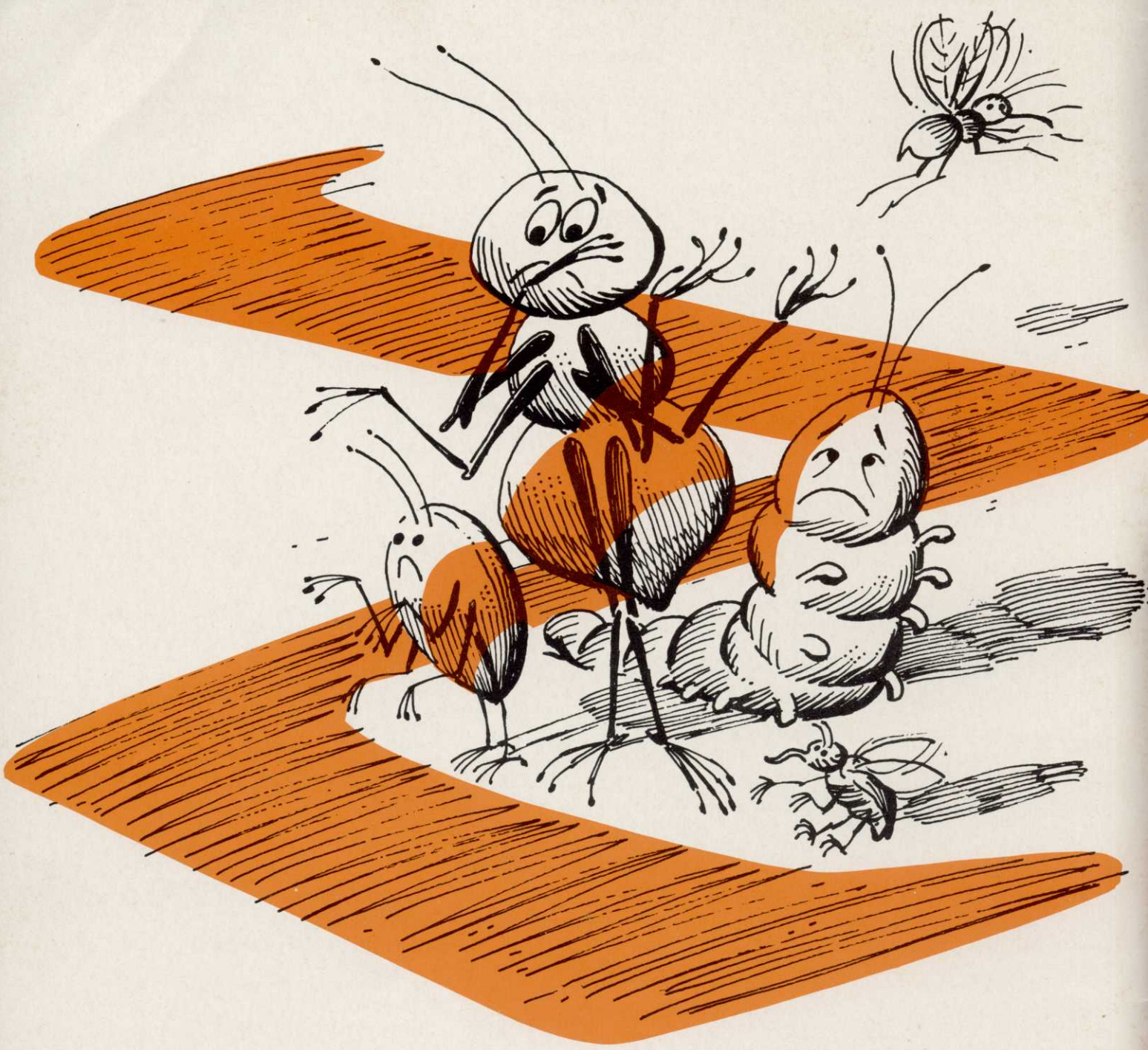


WEEDS TREES and TURF

AUGUST 1971

SPECIAL SHADE TREE ISSUE

Precision Chipper
Deep Root Fertilization
Pine Tree Rinse



The Dow Chemical Company, Agricultural Department, Midland, Michigan 48640.

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DOW

For More Details Circle (106) on Reply Card

HERCULES

Agricultural Chemicals
TURF NOTES

NUMBER 103-1

importance of FALL FERTILIZATION

The basic reasons for fertilizing in the fall are as old as turfgrass itself. And, with the availability of the long-lasting ureaforms such as Nitroform, fall fertilization becomes even more important in a well-programmed turf maintenance program. This bulletin discusses the types of turf, the nutrients needed, timing of fertilization for each type of turfgrass, and the advantages of and rates to use Nitroform.

To know when to fertilize for best results, determine the growth characteristics for your particular turfgrass species, then correlate application with seasonal and climatic conditions. It's easy to determine what type of fertilizer to use, for a slow-release ureaform such as Nitroform® turf food builds turfgrass in the fall and the residual stays in the soil to get turf off to a good start in the spring.

KNOW THE GROWTH CYCLE OF YOUR TURFGRASS

Turfgrasses may be grouped into two major categories—cool-season grasses and warm-season grasses. Cool-season grasses such as the bluegrasses, fescues, and bents produce their best quality growth during the fall and early spring. Warm-season grasses such as Bermuda, zoysia, centipede, and St. Augustine have their most important growth cycle in the summer months. *Nitrogen applications should be properly timed to assure that an adequate and continuous supply is available during these important periods of growth.*

KNOW YOUR NITROGEN SOURCE

All qualified turf professionals know that turfgrasses must have a constant source of nitrogen regulated to the growth cycle. With quickly available nitrogen sources, maintenance crews are tied to a schedule of continuous fertilization. Burning is a constant worry. Heavy rains often leach much of the nitrogen. Maintenance crews are forever in the golfers' way. Spreaders require frequent replacement. Actually, there is no end to the drudgery and worry . . . and the time was when there was no other choice.

This is not the case today. Nitroform provides a long-lasting, slow-release nitrogen source that is nonburning and resists leaching. With Nitroform, two applications per year may be sufficient for most turf. Of course, putting greens and similar turf require more frequent applications of nitrogen.

KNOW THE VALUE OF OTHER NUTRIENTS

The professional also knows the value of P and K in building and in keeping healthy turf. Phosphorus stimulates root growth and helps in crown and stolon development. Potash improves plant vigor and rigidity, and aids also in root development.

ADVANTAGES OF FALL FERTILIZATION WITH NITROFORM® Turf Food

- *To build cool-season grasses during their peak growing cycle, when undesirable grasses and weeds are dormant.*
- *To aid in the development of overseeded grasses and nurse grass for fall and winter turf.*
- *To take advantage of the temperature and moisture conditions best suited for efficient use of fertilizer nutrients and turfgrass development.*
- *To revive all types of turfgrass damaged during the summer months, making fall play more enjoyable.*
- *To strengthen all types of turfgrass for overwintering, benefiting spring play.*
- *To avoid developing "lush" turf that sometimes results from too much spring fertilization.*
- *To release the labor force during the active spring and summer months for other maintenance duties.*
- *To increase efficiency by combining fertilization with the usual fall cultivation practices.*
- *To build a residual nitrogen that resists leaching and that will be available for use as soon as the turf wakes up in the spring.*
- *To provide the most efficient slow-release, residual storehouse of nitrogen available today for healthy turf.*

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☐ Please send the Turf Notes Number 101-1 giving the Nitroform program for my area.

☐ Also, please send the booklet that shows how to compare the costs of Nitroform and conventional organics.

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Soil tests are the only sure way to determine when to use P and K, and to determine the proper amounts. But, it's a safe rule to apply some P and K at least once a year . . . and just prior to the important period of turf growth would naturally be the best.

The soil test will also give the pH of the soil, from which liming practices can be determined. In most areas, the minor nutrients are supplied by the soil, but check your turf specialist, or turf specialty supplier, if you have any questions about local soil deficiencies.

KNOW WHEN TO FERTILIZE

Fertilize heaviest just prior to the most important growth cycle for your particular turfgrass, and at least once more each year at the proper time recommended for your type of turf.

Fall fertilization is extremely important for the cool-season grasses—bluegrasses, fescues, and bents. These grasses produce maximum crown, rhizome, and stolon development during the fall. Soil moisture and temperature are ideal at this season for the most efficient use of available nutrients. Since frost eliminates most weeds early, these turfgrasses, if properly fertilized, can grow and spread into the thin areas without competition from weeds. Fall fertilization helps turf recover from summer use and prepares it for winter hardiness and early spring growth. Spring fertilization of these turfgrasses is also recommended.

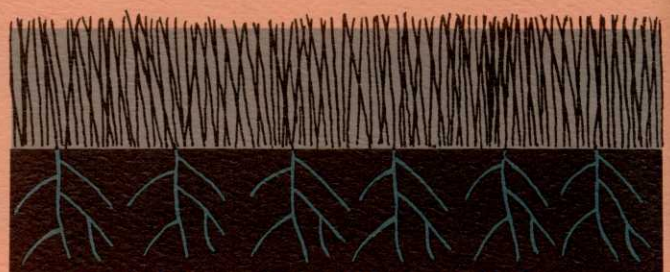
The heaviest fertilization of warm-season grasses—Bermuda, zoysia, centipede, and St. Augustine—should come in the spring to coincide with their most important growth cycle. However, early fall fertilization also is desirable for these grasses. A well-fertilized turf will be damaged less by severe winter weather and will begin growth earlier in the spring.

KNOW HOW TO USE NITROFORM® TURF FOOD

In the central and northern areas of the United States, the recommended yearly application is 8 to 15 lbs. of Nitroform® turf food per 1,000 square feet, or 350 to 650 lbs. per acre. Since these areas have predominantly cool-season grasses, two-thirds should be applied in the fall and one-third in early spring.

In the southern areas where the growing season is longer, apply annually 12 to 20 lbs. of Nitroform per 1,000 square feet, or 500 to 800 lbs. per acre. Split applications are recommended. For cool-season grasses apply two-thirds in the fall and one-third in the spring. For warm-season grasses, apply two-thirds in the spring and one-third in the fall. **When Bermuda fairways are to be overseeded** with annual rye or creeping fescues, apply 200 to 300 lbs. of Nitroform per acre just before or at the time of overseeding.

These general recommendations do not apply to putting greens and similar close-knit turf areas. Consult Turf Notes Number 102 to determine the accurate pounds of nitrogen required annually by the most commonly used turfgrasses.



BE SURE YOU USE A SLOW-RELEASE NITROGEN FOR FALL FERTILIZATION

Ask your Turf Specialty Supplier for Nitroform® turf food as granular Blue Chip® for mechanical spreaders, and Powder Blue* for liquid application. Or, look for the Blue Chip label on mixed fertilizers so that you will know that you have the best nitrogen source—Nitroform.

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STH71-3

How light and small should a chain saw be?

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WEEDS TREES and TURF®

Volume 10, No. 8 August, 1971

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The Cover

A new chipper on the market—the Precision Tree Destroyer—promises to be an important addition to the tree care industry. It's a big machine—but portable and mounted on a trailer bed and pulled by a regular trailer tractor at regular truck highway speeds. The chipper will handle tree trunks up to 22" in diameter. It is made by Precision Chipper Corp., a company with a quarter-century of chipper manufacturing experience on stationary chippers for the forest products industry. Two smaller units, scheduled for introduction late this year, are being built. Operating the Tree Destroyer is a veteran Precision employee, Clyde Hill.

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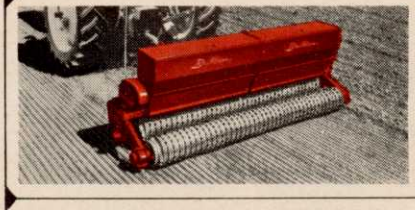

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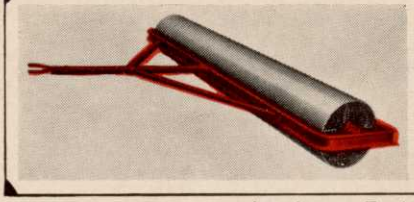

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LS-135R

Editorial

Change By Itself Will Fail

We're a little sick of the constant criticism by the so-called under 30 group. We've yet to hear a single, solid, workable proposal on any subject on which this group can agree.

Most of us who are allegedly suffering from generation gaposis agree. So, why bring it up now?

Frankly, it's just that a tour of sod research plots this past week caused some reflection. At Michigan State's muck test fields, we saw 41 varieties of sod being grown for test purposes. Most looked good. But, compare that with the 30's. Common Kentucky bluegrass by this time of year was dry and brown, unless we had a most unusual season. Bare ground was the rule in most parks and city playgrounds.

It's been this oft-accused materialistic generation which has developed new bluegrasses and blends, which has developed chemical fertilizers, which has made 150-bushel/acre corn crops common (as opposed to 15 bushels during the not-so-good years of the 30's), which has developed chemical pesticides which in themselves have helped wipe out countless health destroying viruses and other pests.

These achievements are tied to the vegetation care and agricultural industries. But look around. Reflect. Remember how we used to worry about our children contracting polio? Before the days of a researcher named Salk?

Today, the nation is green, vibrant, and beautiful—when compared with 30 years ago. Yet, it's little wonder that those under 30 do not appreciate the significance. They've never lived without the finer things of life. Few have worried about a serious and prolonged lack of money or the necessities of life. Few can appreciate that 35 years ago, when all children in a large family reached adulthood, that it was an uncommon occurrence.

Few men live today—who also lived through the decade prior to World War II—who cannot from personal experiences recount better examples as to why we need take pride in our collective record.

Change, as so often proposed by young people, without a practical approach to reality, will fail.

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Specially built trucks, aerial basket units, cranes, power saws, brush chippers, stump grinders, sprayers, and a wide variety of quality-designed hand tools — Davey owns them all.

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Government News / Business

Cutrine Okayed For Potable Water Applied Biochemists, Inc., Milwaukee, Wis., has received amended registration from the Environmental Protection Agency for use of Cutrine, an algaecide, in potable water reservoirs and other aquatic areas. Previous registration was for use in lakes and trout ponds.

Herbicide Added To Mulch A new product by Masonite Corporation, Febrex Root Insulator/Weeder, has first clearance from EPA. It's a herbicide treated ground cover and mulch. Masonite will use dacthal which is registered for use on most ornamentals and around established trees, shrubs and ornamental plantings. Sales will begin in 1972, in selected metropolitan areas of southern and north central states.

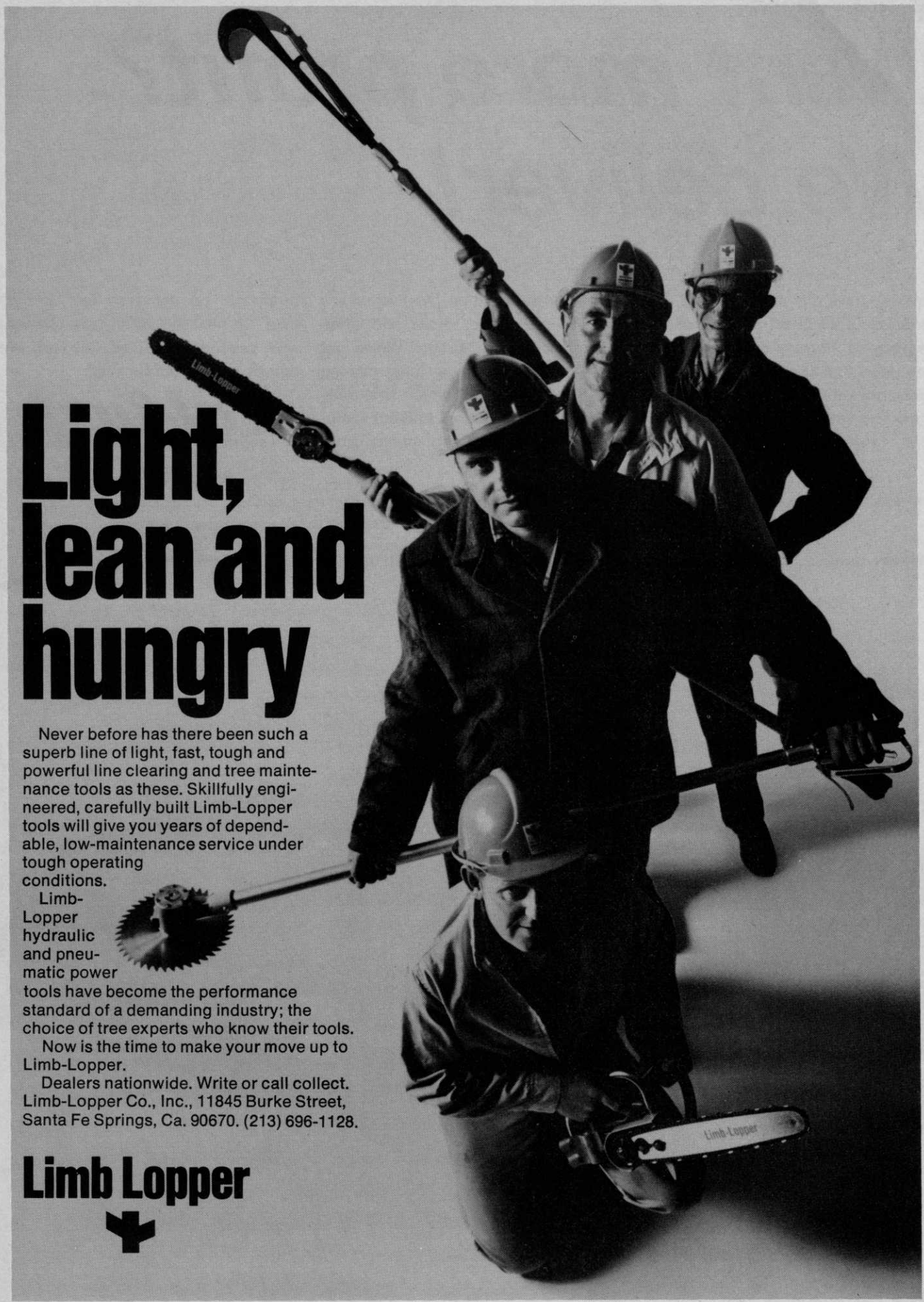
Amitrole Registration Cancelled The EPA has cancelled the registration of Amitrole, widely used on croplands. Evidence indicated that the herbicide may cause tumors in experimental animals.

Slow Moving Vehicle Emblem Mandatory Effective this month (August 27) the Occupational Safety and Health Act of 1970 becomes effective for Slow Moving Vehicle Emblems. Applys to all states.

Rohm and Haas Receives Priority For Stam Use of Stam, a postemergent herbicide (3,4-dichloropropionanilide), has been awarded to Rohm and Haas in a decision by the Board of Interference of the U.S. Patent Office. Previously (1967) the priority was awarded Monsanto.

Grants Awarded For Gypsy Moth Studies Gypsy moth damage likely will continue in the news as the public becomes more closely associated with attendant damage. Just announced by the USDA are four university grants to further study the problem: $26,845 to Penn State to develop a sampling system for each of the life stages of the gypsy moth; $75,000 to Ohio State for studying chemical factors in ash and tulip poplar leaves that inhibit feeding by gypsy moth; $33,000 to the University of New Hampshire for studies of electronic measurements of tree defoliation; and $18,988 to Syracuse University for studies of potential compounding effects of the invasion of the two-lined chestnut borer in red and white oak.

More Protection For Fish and Wildlife Fish and wildlife may get more protection if S. 1463 (McGovern, S.D.) and S. 1563 (Schweiker, Pa.) passes. It promises to impose criminal penalties on anyone shooting certain birds, fish or animals from planes.



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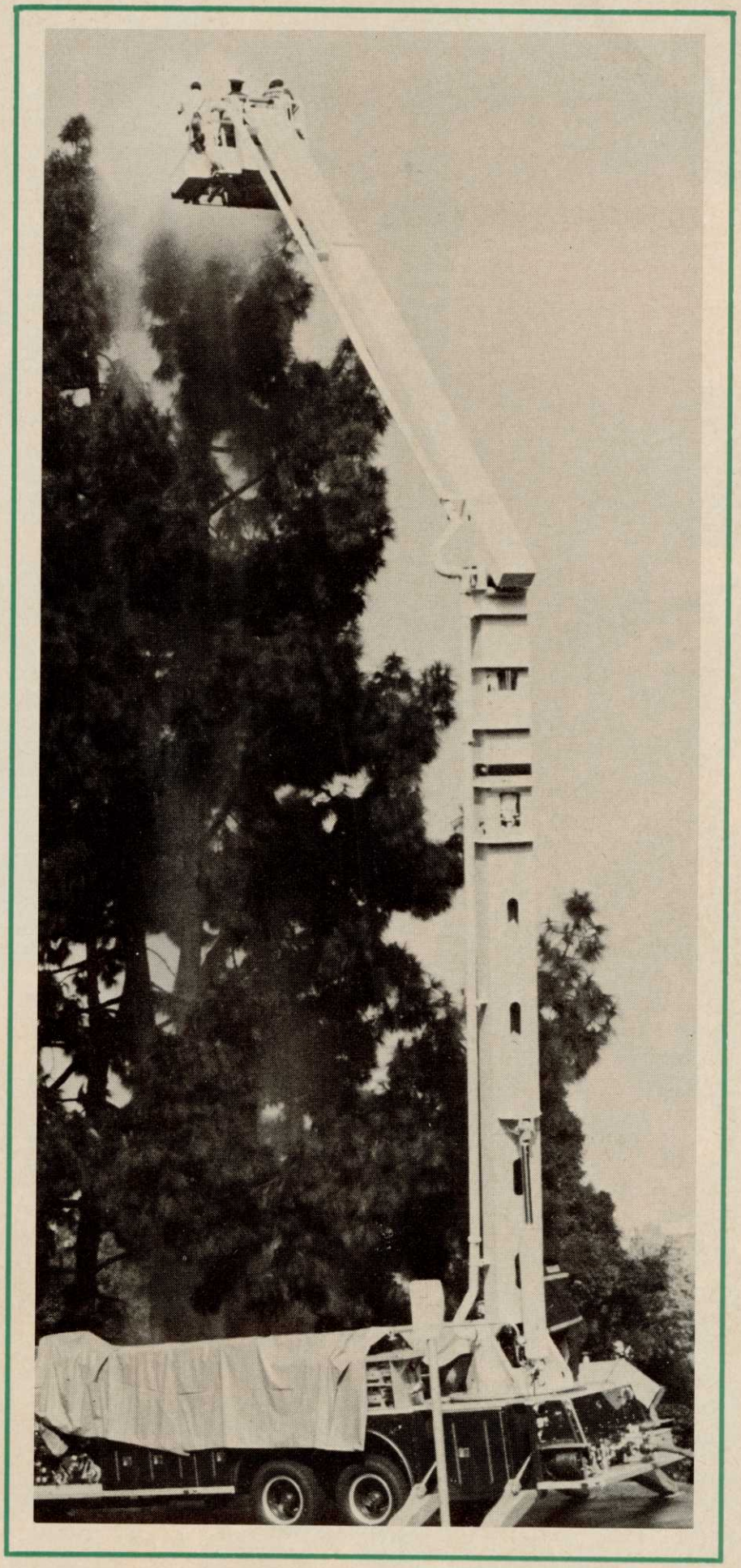
PINE TREE RINSE



DIMINISHING PINES in Southern California is a direct result of pollutants. In mountain areas of Los Angeles and San Bernardino, smog has damaged or killed many native pines. The toll will likely rise as air contamination increases.

Pollutants are less severe in the San Diego area than in other sections, but still adversely affect ornamental pines.

In San Diego, contaminates are generally carried away by prevailing marine breezes, then dispersed in the atmosphere over the mountain ranges to the east of the city. This same breeze is responsible for carrying exhaust fumes from the freeway interchange across Presidio Park. Since the completion of this interchange, problems with Presidio Park pines have increased.

Ornamental pines most severely affected in San Diego have been

(Continued on page 51)

THE HIGHWAY TREE

SELECTION AND MAINTENANCE

By ROBERT A. BARTLETT

TREES represent practical values on the highway beyond aesthetic considerations. They offer the driver a sense of psychological ease. They help eliminate highway hypnosis, a cause of numerous accidents; they reduce driver tension.

Trees are our most dominant and important plant and must be conserved, preserved and maintained for a better environment and world. When planted along highways, they must possess certain qualities if their existence is to be economically and ecologically practical. First, the general growth pattern of the tree must not interfere with the functions or design of the highway. It should have a root development which does not damage shoulders, sidewalks and pavements. Its stem should be straight, clean and have a bark covering that is not easily damaged by abrasion. The foliage should be pleasing to the eye and not continually dropping. The tree should also be as free as possible of "being dirty" (fruit, leaves, bark, branches and other parts falling to the ground).

Secondly, it must be adaptable to the soil and environmental conditions in which it must grow, and be resistant as possible to insects, diseases, windstorms, reflected road heat and drought.

Lastly, the species chosen should be one of long life and should improve as it ages. Those best able to endure conditions along highways include the Norway maple which has a compact crown, casts dense shade, is hardy and also quite beautiful.

The sycamore combines many of the features most desired from highway trees. It grows rapidly, is resistant to attacks by insects, and provides a medium shade cover.

The scarlet oak also possesses most of the features of the sycamore with the added benefit of providing a spectacular display in the fall.

The honeylocust is also suitable for highway planting, but should be used only when light shade is required.

Some species of Eucalyptus are very desirable highway trees, while others are brittle and have a tendency to snap off. Eugenia is often recommended as a street tree while many of our evergreens can and should be used for shade trees in

Pictures at left and above illustrate damage done to trees by the changing water level and drainage patterns resulting from highway construction, these resulting directly from cuts by blasting. Trees at top of cuts should have been removed since they will die anyway. In the meantime, they will require maintenance and are a hazard to highway below.

Trees nearest road are dying because of soil piled on top of root area during construction. These should have been removed.

areas where they have a tendency to grow well.

The shad bush, tung-oil tree and tupelo have done well along the coast states and also on the West coast.

Much research should be done before using native trees for planting and maintaining along the highway right-of-ways. Also, existing trees along new highways often have the soil around their roots compacted during the road construction. Roots may also be cut or damaged. Such conditions may cause death of trees. Often, it is advisable to plant new trees in place of those whose survival or suitability is in question.

If a highway is to pass through a heavily wooded area, proper consideration must be given during design and construction phases. This will protect and conserve desirable trees so the road does not destroy the natural beauty of the scene, but becomes an integral part of the environment it serves.

Two considerations concern water. One is availability of water and the other is the problem of polluted runoff. Road runoff often contains oils, salts and other compounds that represent a potential threat to trees. For this reason, road runoff should be prevented from collecting near the root zone of trees. If a storm sewer is used, the drainage system should direct the water away from the tree's roots. If drywells are used, they should be located in the clear areas between the trees so ground filtering can remove most of the pollutants.

It is often very difficult for highway trees to receive an adequate supply of water for their root system. The highway itself tends to act as a large waterproof ground cover which lowers the area water table. This situation imposes serious limitations on the flow and amounts of water necessary to support healthy tree growth, thus making it necessary to provide a greater space between trees in order to allow more ground area from which each tree can draw water. This space will also serve to make work on the trees a more easily accomplished task.

Economic Realities

For the past 35 or 40 years, highway departments have instituted tree planting programs, but they have generally failed to allocate the necessary maintenance funds. This has resulted in the loss of many trees and a waste of dollars.

During the last 10 years, many states have contracted tree planting programs at a cost ranging from one-quarter of a million to $2½ million per year. In most cases, a similar sum should have been appropriated to maintain these trees during the seven to 10-year period following planting.

Maintenance Factors

Once trees have been planted along the highway, an adequate maintenance program must be maintained if they are to endure and flourish.

A feeding program must be initiated to provide the tree with the nutrients it requires to insure its survival. Trees existing naturally in the forest are provided with the necessary nutrients as plant material decays. This process does not usually occur along the highways.

Also, trees should be sprayed whenever infection or infestation occurs or is imminent. Pruning must be done regularly to eliminate the danger of falling limbs and remove unwanted growth. In addition, tree

(Continued on page 50)

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PRECISION MODEL 75 TREE DESTROYER

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1. 75" — 3 knife Precision Chipper powered by Cummins 310 HP diesel engine.
2. Hydraulically powered crushing rolls.
3. Heavy duty articulated knuckle boom loader with 20' reach and 400 degree swing, capacity at 15' is 7504 pounds.
4. Hydraulically powered chip discharge spout for spreading or loading chips.
5. Chipper hood opens easily with one man by hydraulic hand pump.
6. Air system built in for air wrench to change knives.
7. Heavy duty stabilizers powered hydraulically on all four corners. Set up for operation in a matter of minutes.
8. Air brakes and lights to ICC regulation.
9. Hydraulically powered reversing conveyor 25' long with 6110 chain.
10. Custom built trailer 35' long, 8' wide and 12'9" overall height.
11. Wheels are dual tandem and 1000 x 20.

Weight approximately 67,000 lbs.

— Announcement —

After a quarter-century of building custom chipper equipment for the forest products industry, all of which has been of a stationary design, the company has made the decision to make precision equipment — large in design for major work similar to that demanded by the forest products industry, yet mobile enough to serve the major tree company, the municipality and others with big tree removal jobs.

The Management

PRECISION CHIPPER CORPORATION

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BIRMINGHAM, ALABAMA 35207
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For More Details Circle (136) on Reply Card

The PERFECT BROADLEAF WEED CONTROL

IS IT POSSIBLE?

BY J. S. SKAPTASON
Director of Research
Gordon Chemical Corporation
Kansas City, Kansas

PROFESSIONAL TURF MEN have had many fine herbicides made available to them. These professionals have learned what potential problems to avoid and what advantages to exploit in these materials. But the search goes on for a perfect herbicide, while we fail to put together all existing information on chemicals, practices and equipment for best use of what is available. The opportunity for near perfect weed control is at hand and all but a few have failed to recognize the potential.

The perfect herbicide for turf would control all vegetation except the particular species of grass planted. The more we expect from a single chemical in the way of selectivity, the more difficult it is to visualize what it might be or how it might work. Rather than expect one chemical to do all things, it is much more realistic to use a combination of two or three compatible chemicals working together, properly applied, with the proper wetting agent where needed.

In the late 1950's, the Research & Development Department of the Green Cross Products Div. of Sherwin-Williams Company of Canada, Ltd., began attacking broadleaf weed problems, not by looking for new chemicals but rather by working with existing materials in such a way as to amplify the good features of each product and minimize any detrimental factors. To use this approach, it was necessary to understand the good and the bad of each chemical.

One, 2,4-D, was an effective herbicide, but it did not control chickweed, clover and many weed species which were resistant. The logical approach to the resistant weeds was not to discard the 2,4-D, but rather add a chemical which would control them. For example, Silvex or 2,4,5-T was added to the 2,4-D and control of chickweed and clover was obtained. This gave a product of wider spectrum of control, but occasionally some injury to sensitive grasses occurred and still some weed species were left uncontrolled.

When MCPP became available, it was evaluated for its safety to grasses and control of clovers and chickweed. This material was safe on grasses and also had no human toxicity problems. Green Cross researchers noticed that with certain combinations, unusual things were happening. When they added 1 pound of MCPP to 2 pounds of 2,4-D rather than a herbicide effect equal to 3 pounds of chemical, they were amazed to find a herbicidal effect equal to several times the amount of chemical applied. Other scientists were reporting the same "more than additive" effect. Not only was the second chemical bringing control of weeds susceptible to that chemical, but now a third group of weeds was being controlled which were resistant to both chemicals individually.

When dicamba was introduced to the turf market, it brought control of the polygonous weeds which was not possible before. Researchers found that adding BANVEL D (dicamba) to 2,4-D that again "more than additive" effects were demonstrated. The combining of dicamba and 2,4-D made it possible to reduce the dicamba dosage down from 1 pound per acre to ¼ pound or ½ pound per acre. The "more than additive" effect was so great, a patent was issued to the manufacturer covering the mixture of 2,4-D and dicamba.

The Green Cross Products researchers went one step farther. They added dicamba to 2,4-D and MCPP. Confirming research conducted by a Canadian University showed the dramatic effect possible from this three-component mixture. The amount of chemical required to give 90% control of a number of weed species was carefully determined in field tests. The three chemicals were applied individually and then were applied as one treatment containing all three chemicals. The difference in the total amount of chemical required per acre was very great.

The word "synergism" can be applied to this type of relationship between chemicals. Synergism is a much abused word, but a dictionary of biology defines it as follows: "Synergism: Combined activity of (chemicals) . . . such that an effect is produced greater than sum of effects of each (chemical) acting

(Continued on page 44)

No Doubt About it... Merion KENTUCKY Bluegrass First Choice Always... All Ways!

The men who know best have placed their continuing stamp of approval on MERION — Park and Golf Course Superintendents, Scientists, Growers and Experimental Stations. Whether you're more interested in *Sod for Convenience or Seed for Economy,* MERION is your best choice. MERION is famous for its deep green beauty that lasts the summer through with less work and watering. Crowds out weeds and lesser grasses. Takes wear and tear and comes right back. No wonder, Seed or Sod, MERION is still Number One! Get growing *now* with MERION.

MERION BLUEGRASS ASSOCIATION
101 PARK AVENUE, NEW YORK 10017

Approved by Turf Research FOUNDATION AS AN IMPROVED VARIETY OF KENTUCKY BLUEGRASS

Genuine MERION KENTUCKY BLUEGRASS SOD

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Florida Pilot Project

New Formula May Open Door For Deep Root Tree Injection

DAWN MAY break for direct, deep root injection in fertilizing plants and trees in South Florida; some predict it is the destined feeding procedure.

A special formula, called Dine-A-Mo "S," is injected into the roots system by a hydraulic unit. It is being watched carefully by landscape contractors, nurserymen, and government research personnel.

Right now, focus is on a pilot project of the Florida Department of Transportation involving a mile of expressway and city street interchange (SR 836 and Northwest 27th Avenue, Miami). Should this test succeed, Arnold Ramos, District Four Engineer, Fort Lauderdale, is hopeful the method can be used to develop other interchanges in the District.

Nearly 7,000 trees and plants, and 20,000 square feet of Bitter Blue Sod have been planted, and subsequently fertilized by the deep root injection method.

The DRIF (Deep Root Injection Feeding) formula was developed by Howard C. Bardsley, horticulturist for the FEC Fertilizer Company, at Homestead. It includes DuPont's Uramite, a slow-releasing material to which plants respond quickly, but which continues to supply nourishment for six or more months.

Formerly Charlie Johnson (Charlie P. Johnson Spray Co. of Miami) explored the root feeding technique in South Florida some 15 years ago. He was hindered by inability to get a proper nutrient balance. But his staunch belief in the method helped inspire Bardsley to research numerous formulas, finally resulting in Dine-A-Mo "S."

Johnson then received the first commercial try with the "recipe" which is generating enthusiasm for its compatability with and stimulating effect on plants and trees. He is using it regularly on South Florida ornamentals.

At the Interchange project, response is being checked for the thousands of plants and trees, including 24 Ficus Benjamina trees, 20 feet tall with 20-foot spreads.

These trees were moved untrimmed, but had been root pruned for almost sixty days prior to the move by the contractor, Ken Lones of L & G Landscaping in Miami.

Trees were deep root fed five days after moving. It is believed that this has contributed to the high percentage of success by providing immediate food directly to the new feeder roots, thus gaining a quicker response to foliage. Only two of these 24 massive trees show possible signs of nonsurvival.

Other highway test projects being observed by Carl Higgins, Florida Department of Transportation, is the palm-lined Julia Tuttle Causeway (I-195) over Biscayne Bay. This area is constantly swept by salt-laden winds. Higgins expects to

evaluate results for feasibility and economical feeding of such highway trees and plants. The Dine-A-Mo "S" formula is a complete major-element fertilizer, plus an additive containing chelated minor elements.

Briefly, Bardsley summarizes the system as follows:

1) The injection unit (probe) is assembled by FEC Fertilizer Company from a "pistol grip" quick acting valve, a 4 ft. length of threaded ¾" aluminum pipe and a injection point with splash shield developed by FEC. The entire unit or separate parts can be purchased from FEC Fertilizer Co.

2) Any size sprayer or tank can be used as long as it has mechanical agitation. Mechanical agitator is necessary because the Dine-A-Mo "S" tree and shrub fertilizer is primarily a suspension mix similar to wettable sulfur rather than a liquid or water soluble fertilizer.

3) Each "shot" is two quarts of liquid which contains the correct amount of Dine-A-Mo "S" tree and shrub and FEC Claw-El minor element mix.

4) The number of injections per shrub or tree varies depending on the size of the plant. Basically, small shrub hedging is injected one "shot" at 3-foot intervals. Large shrub hedging is two "shots" at 3-feet intervals and large shrubs and trees vary from 3 to 5 shots depending on size.

5) Dine-A-Mo "S" tree and shrub is 16-22-22 analyses suspension fertilizer mix that feeds for about six months. FEC Claw-El is a spectrum chelated minor element mix containing magnesium, iron, manganese, copper and sulfur.

In photos above: Charlie P. Johnson, left, Howard C. Bardsley and Ken Emerick; and at right, Emerick feeds a mango tree.

The Grass Seed Industry —An Oregon Empire

The commercial turfgrass industry today demands quality seed. Golf course superintendents, sod growers, park superintendents, and the professional responsible for factory lawns and similar areas expect seed to be weed free and viable.

The seed producing segment of the industry has made big strides in meeting this demand. A tour of the Williamette Valley of Oregon shows vividly just how far seed growers and processors go to guarantee that quality is maintained. They grow a product to sell. And they are rightly proud of progress made to date.

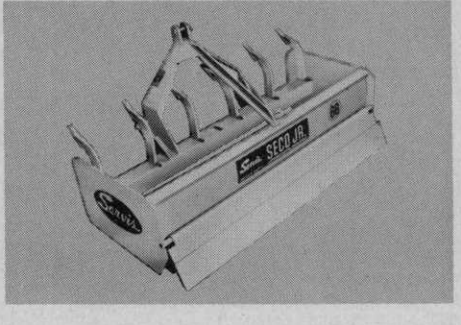
Last month the Oregon Chewings Fescue and Creeping Red Fescue Commission along with the Oregon Orchardgrass Commission played host to a cross section of their distributors and the press. Guests were on hand for opening of Grassland '71 at Eugene and then were bussed throughout the heart of the Oregon turfgrass seed producing area.

(Continued on page 22)

the budget scrapers

Servis' Automatic Lift-Trip Scraper pays for itself in time and work saved. Without leaving the seat, the operator can scarify and scrape at the same time...or level, grade, and backfill independently. Scarifier teeth raise and lock automatically when the box is raised. Teeth stay up until the operator "trips" the easy-to-reach handle. It's the most versatile and most productive box scraper on the market. Available in 66″ and 72″ models.

The SECO, JR. is a heavy-duty scraper for contractors who seldom need scarifiers. It saves money on the original investment. Scarifier shanks and teeth can be easily installed manually later, in either up or down position. Available in 66″ and 72″ models.



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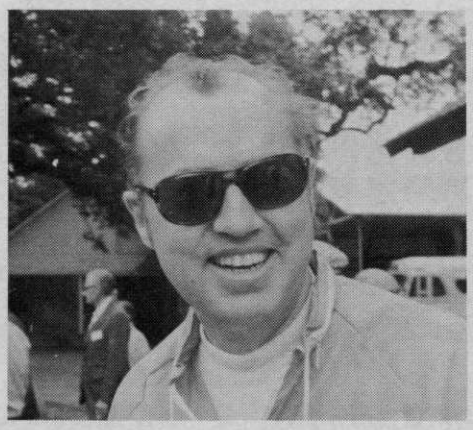
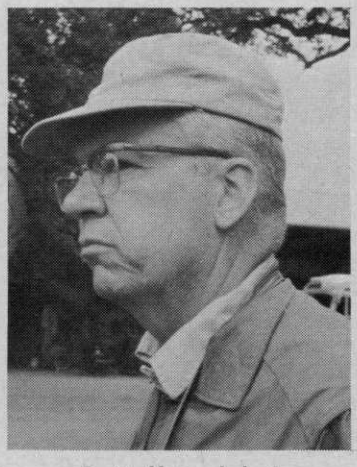
Seed Tour 'Personalities'

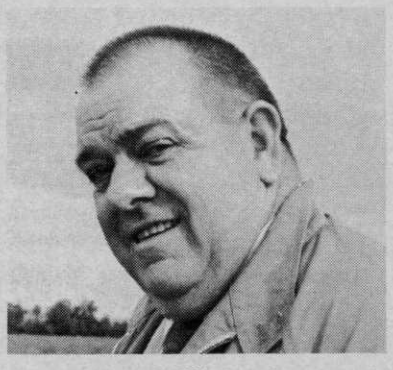


Roy Peterson, Peterson Seed Co.,
Savage, Minn.

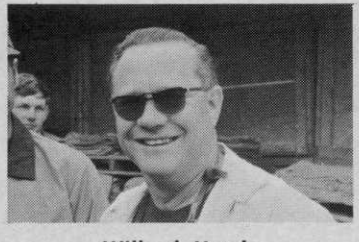
W. Scott Lamb
Exec.-Sec., Chewings
Fescue Comm., Salem



B. H. Mangelsdorf
E. F. Mangelsdorf Bro., Inc.
St. Louis, Mo.

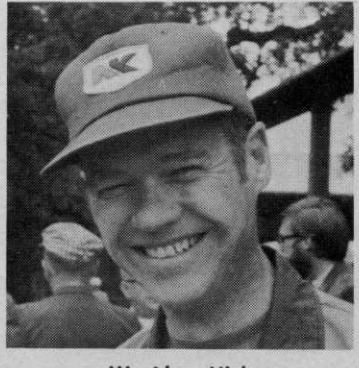


W. K. (Bill) Brawley
Brawley Seed Co., Mooresville, N.C.

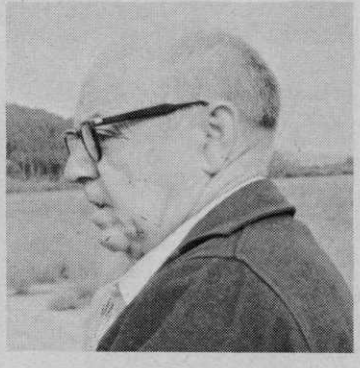


Willard Hovde
Agway, Inc., Buffalo, N.Y.

S. A. (Stony) Jackson
Benton County Ext. Agent
Corvallis



W. Alan Hick
Northrup, King and Co.
Minneapolis, Minn.



Goldie Marcott, Grower
Sublimity, Ore.

Grass Seed *(from page 20)*

Fields and processing plants were on the agenda along with the seed lab and certification operation at Oregon State University, Corvallis.

This certification program has become increasingly costly to growers. The ancient idea to $2 or $3 for testing samples is a thing of the past. The grower today will spend in excess of $50 for each sample for purity and germination alone. Special tests for seed weight, viability, x-ray, bioassay, variety, etc., will further increase the cost.

At the Corvallis seed lab, some 40 thousand tests are being made annually for 11- to 12,000 samples. Because of the stringent demands for quality and the big business that the seed industry has become, a laboratory seed analyst spends two years in the lab before becoming a competent independent analyst. This training begins after an intensive 3-week training period by a supervisor.

Today, Oregon is producing in excess of 300,000 acres of grass seed (both turfgrass and pasture grass seeds, the latter being mostly two dozen different varieties of orchardgrass). The state claims the title of "Grass Seed Capital of the World," and bases its claim on a $30 million yearly seed business. Industry leaders in the state estimate that 41% of the nation's grass and legume seeds are produced by Oregon growers. Legumes account for only about $5 million of the total.

Bulk of the production comes from the Willamette Valley. A whopping 83% of this is grass seed, with Oregon growers increasing seed stocks for the country's leading producers.

Big problem for growers concerns getting fields ready for certification. Once in production, the problem becomes one of keeping the stand clean to meet purity standards. New research at Oregon State University has pointed up the problem of volunteer-plants which grow from buried seeds of previous crops. A researcher at OSU, Te May Ching, was on hand at Grassland '71 to discuss findings.

Seeds of Oregon annual ryegrass persisted up to nine years. While viability was low, the results may render a field unsuitable for this variety for an extended period.

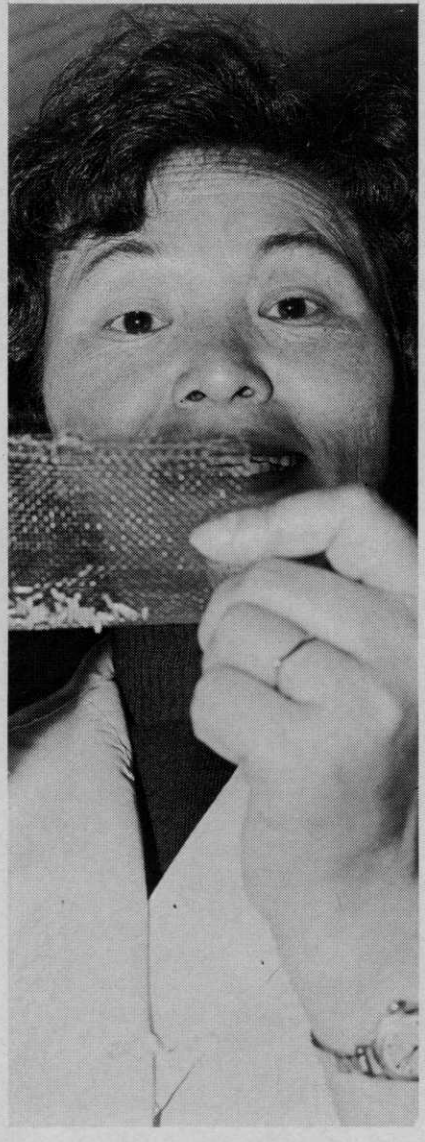
By contrast, no live seeds of Danish commercial orchardgrass, Alta tall fescue, or chewings fescue were recovered from soil in the third year.

Buried seeds of Newport Kentucky bluegrass showed no viability after the second year until the eighth year when a trace of viability appeared and was carried over into the ninth year.

Highland bentgrass seeds were more persistent than any of the other grasses, with viability averaging 9.5% in the ninth year. The accompanying table (Table 1) shows the current number of years a field must be free of a species in Oregon before being put into seed production.

Arrangements for the seed industry tour were made by W. Scott Lamb, executive secretary for the two commissions. He greeted seed distributors at Portland and oriented them to the Oregon industry.

OSU Researcher Te May Ching shows mesh enclosed seeds which are buried in a 10-year project to measure their ability to live. Project is in 9th year.



DITCH WITCH '71...

THE NEW VP12 VIBRATORY PLOW

Installs service lines, tubing without trenching

THE DITCH WITCH VP12, a completely new vibratory plow. It is a self-propelled, four-wheel-drive power-steerable unit that buries service or drop wire and copper, plastic, or steel tubing to diameters of ⅜" without trenching! Turf damage is held to absolute minimum. The plow shaker is powered mechanically by a 25-HP air-cooled engine independently of the dual-range hydraulic four-wheel-drive. Stability on hillsides and rough terrain provides unmatched operator safety. Controls are easy-to-reach for operator convenience. Compactness provides maximum maneuverability in tight places and one man easily can load the VP12 in a small van, the back of a pickup or on a Ditch Witch trailer. It will move through a standard yard gate with room to spare. Available with either feed or pull blade for installation speeds up to 150 FPM.

DITCH WITCH

The Professionals

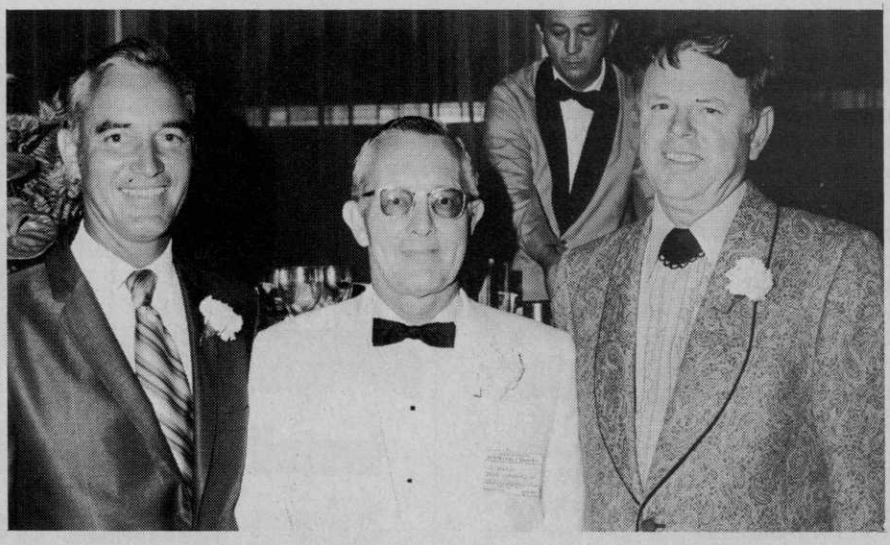
A Division of
Charles Machine Works, Inc.
100 Ash Street, Perry, Oklahoma 73077

Daconil 2787® fungicide helps you build a strong turf program. It checks leaf spot, dollar spot, brown patch and many other fungus diseases without harming your grass.

Daconil 2787 fungicide has been field tested world wide. It has shown high weather resistance. And moves to protect new growth between sprays. Always read the label before using.

See your dealer for more information. Or, write Agricultural Chemicals Division, Diamond Shamrock Chemical Company, 300 Union Commerce Building, Cleveland, Ohio 44115.

Diamond Shamrock Chemical Company



New Florida Nurserymen and Growers Association officers for 1972 are: l. to r., Richard A. Gladwin, second v-p, Joseph Welker, pres., and Joseph C. Shaw, president elect.

Florida Nurserymen Present Award Program

Landscaping held the focus, but something new was added, when the 1,400-member Florida Nurserymen and Growers Association met in Miami Beach in May. Sixteen Zeta Tau Alpha Sorority girls from the University of Georgia, told their "aging" audience how it is to cope with the problems of youth.

At an awards luncheon, 13 state-level awards for landscaping perfection were presented, with Comm. Doyle Conner, Florida Dept. of Agriculture doing the honors. Also, two sweepstake-citations were given for landscaping technique and execution.

More than 20 other recognitions covering residential, commercial, industrial and "unique" categories on the 14-chapter level will be awarded in June at chapter dinners. Salvatore Altieri, Boca Raton, was chairman of the annual contest; judges were headed by Dr. Herick Smith, Dean, School of Landscaping, University of Florida.

Taking home the lion's share of the awards was George E. Russell, Miami, who not only was awarded four landscaping prizes, but was judged the Most Outstanding of the 14-chapter presidents.

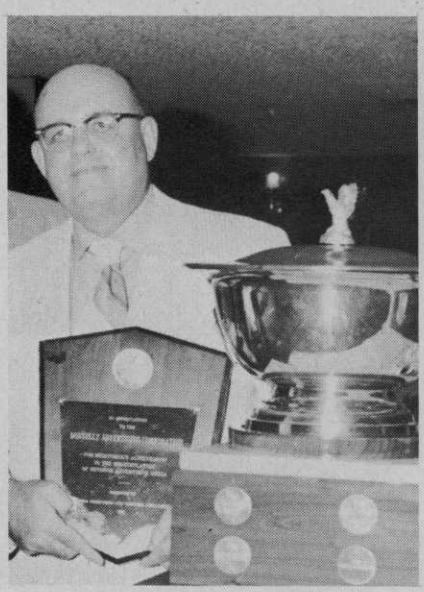
Of the state-level winners, most of the landscape contractors and nurserymen were from the Greater Miami area: Russell, Inc., four; Arvida Corp., two; Tropical Landscape Co., one; Ken Lones Landscape Co., one, and L & G Landscape Co., one. Others were, Cypress Creek Nurseries, Windemere, one; Palm Nursery, Naples, two, and Webster's Nurseries of Osprey, one.

Also, Robert Cochrane, Jr., of Donnelly Advertising Corporation of Florida (Miami) was presented a special plaque for his company's "philosophy in outdoor advertising-beautification program."

A new state-level trophy for outstanding landscaping technique, the Clifford Butler Memorial Award, was given through the association by Wendell Butler, Butler's Nursery Supply Co., of Fort Lauderdale. William Colburn, Cypress Creek Nurseries, was the winner.

A long established award for landscaping, the Dick Pope Silver Tray, given by Dick Pope, Sr., Cypress Gardens, went to Jack Siebenthaler, a past president of the association,

Lawrence W. Clements receives Odenkirk, most coveted award given by FNGA. Trophy rotates each year to new recipient.



Seminole Nurseries, Seminole.

The Reasoner Tropical Nurseries of Bradenton (Florida's oldest nursery) yearly presents a silver trophy to an individual with a long-standing service to the horticultural industry; it was presented to Bert Livingston, garden editor, Tampa Tribune.

Most coveted award, the Odenkirk, also given by Butler through the association, was presented to Lawrence W. Clements, Lake Garfield Nurseries of Bartow. He too, is a past president of the FNGA, and was honored for his "services beyond the call of duty" during the past year.

Officers elected at the convention are, Joseph Welker, Duval Landscape Co., Jacksonville, president; Joseph C. Shaw, Shaw Nursery and Landscape Co., Miami, president elect; Richard A. Gladwin, Gladwin Nursery, Jupiter, second vice president, and John A. Blaser, Blaser's Nursery, Tallevant, third vice president.

New directors are: George E. Russell, Russell, Inc., Miami; Robert L. Hartwig, North Florida Landscape Co., Jacksonville, and Raymond Smith, Smith Garden Center and Nursery, Largo.

Environmental Services Offered By Dow Chemical

A new form of service to industry is being offered by Dow Chemical via its Environmental Control Systems business. Purpose of the venture is to help identify and solve environmental health problems on a custom basis. Dow is offering the service both to industry and government, according to Manager Arnold W. Schaffer.

The new Dow service is programmed to serve three areas of environmental concern: Occupational health and safety, directed toward evaluation and control of occupational hazards in industry; Community pollution, oriented toward the public health aspects of environmental pollution; and Product safety, designed to provide expertise in assessing and evaluating toxicity, safety and other environmental effects of new and existing products.

The company with its size and experience in the field has a large reservoir of professional skills and experience in a variety of scientific fields among its personnel.

Specifically, the service is expected to cover such areas as industrial hygiene, safety, air and water quality, laboratory analysis, noise control, engineering, toxicology, consulting, education and training, contractual operation, testing and inspection, management in solid and liquid wastes, and information.

Headquarters will be Midland, Mich.

Fanny Flag Is Official Emblem

Ag-Tronic, Inc., Hastings, Neb., has named their slow moving vehicle emblem Fanny Flag. Now generally standard for farm equipment or other slow moving vehicles on the highway, Ag-Tronic reports its new version is 40 percent more reflective.

The company says the Fanny Flag emblem is now clearly visible for more than a quarter mile, either day or night. During daylight, the fluorescent orange triangle in the emblem's center serves as a warning to motorists. At night, the reflective red border identifies the slow moving vehicle.

SAFETY TEST HEAVY DUTY WOOD/CHUCK® 12 & 16 inch CHIPPER

FIRST IN PERFORMANCE, ECONOMY, SAFETY

See the WOOD/CHUCK Demonstrated at the International Shade Tree Conference

Okay. But what puts Safety Test Wood/Chuck in a class by itself where chippers are concerned? Just superior performance, economy and safety.

First, there's less down-time for blade adjustment and replacement. The Wood/Chuck's blades lock into the rugged rotor and automatically position properly. This takes just minutes for a Wood/Chuck but often requires hours with other chippers. Wood/Chuck's blades are "V"-grooved for full length support that means extra safety. And where most "chippers'" blades are so positioned that chips are actually crushed away . . . the Wood/Chuck's shallow blade angle slices chips away. Goodbye friction, wasted energy and vibration; jobs go faster, fuel goes farther.

Only the Wood/Chuck has really been built from the ground up as a chipper for heavy-duty use. It's modern, functional, no-nonsense design sets it apart. Above all, the Safety Test Wood/Chuck has that built-in Safety Test "Extra Measure" of dependability. You can rely on it to do a full day's work . . . day after day, year after year. Frankly, there are dozens of reasons why no other chipper compares with the Wood/Chuck. You owe it to yourself to get the full story from your Wood/Chuck representative or write Safety Test & Equipment Co., Inc., P.O. Drawer 400, Shelby, N. C. 28150.

For More Details Circle (128) on Reply Card

Crane handles BAG-35, a 35 cu. ft. unit, which is 40" x 51" in size. Allowable load for this size super sack is 3300 pounds.

MATERIALS HANDLING

NEW CONCEPT

System being used for ground application in company designed fertilizer spreader.

A new idea in materials handling is flourishing as a result of a Texas company's market foray.

It amounts to a bag—or a super sack. And it comes in all sizes, from 7- to 88 cubic feet in capacity.

The unit is available, along with counselling on designing a system to fit any operation from a full line farm elevator operation, to spreading fertilizer on a golf course, from the Better Agricultural Goals Corporation (BAG), Dallas, Tex.

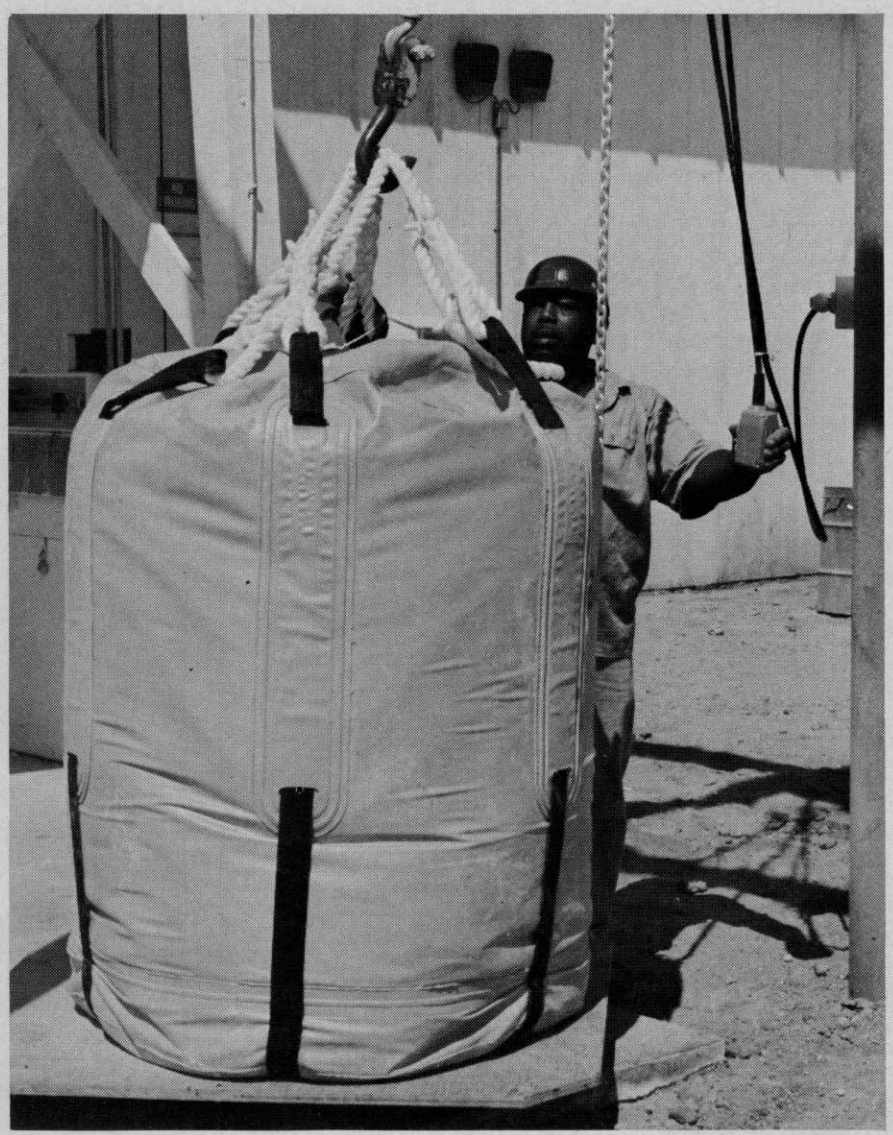
At present the "super sack" is being used not only for aircraft loading (for which it was originally designed) but is being utilized as a nurse unit for a specially designed ground spreader which BAG Corporation is also making available in its marketing program.

Big advantage—according to an elevator manager, Dan Thorton, Wintermann & Company, Eagle Lake, Tex., who is using the entire system—is cost savings in handling fertilizer. Thorton says the containerized handling saves filling labor of paper bags, eliminates the corrosive problems in handling fertilizer, and literally the super sack becomes its own dispensing mechanism.

Bags, Thorton continues, can be pre-loaded at the operator's convenience, stored outside, and then used again and again. In fact, he reports that the super sacks carry a 2-year guarantee. He uses custom designed bags of 35 cu. ft. capacity.

The 35 cubic foot capacity bag is constructed of polyester fabric, coated with polyvinyl chloride resin, reinforced nylon sling and vinylon anchored hoisting rope cradles. The standard bag sack used by Thorton is designed for a maximum working load of 3300 pounds. A "heavy-duty" model will handle 5600 pounds. All containers are collapsible, reusable, practically indestructible, with tare weight lighest and the tear resistance highest. They have the advantages of a package and the

(Continued on page 38)



The new super sacks designed and marketed by Better Agricultural Goals Corporation, Dallas, Tex., range from a capacity of 7 cubic feet to 88 cubic feet.

Skyworker Names Western Distributor

Skyworker Aerial Lifts and Roustabout Mobile Cranes of Delaware, Ohio, has named a new distributor for the West Coast. Al Asher & Sons, Inc., Los Angeles, Calif., will handle sales for California, Arizona, and Nevada.

Skyworker is manufactured by Hughes-Keenan Division of Transairco, Inc.

Al Asher & Sons is located at 5301 Valley Boulevard, L.A.

Culture of Bonsai Is New Florida Publication

A new Florida Agricultural Extension Service circular promises to be popular among arborists. It contains data on culture and maintenance of bonsai trees.

According to the new publication —"The Culture and Maintenance of Bonsai"—the terms bonsai and "ming tree" depict (at least to Americans) small trees of great age.

Bonsai actually, the authors say, is not a secret process. It is an art form using principles of horticulture known since man first began to cultivate food.

Authors are: William C. Meredith and Jasper N. Joiner, former Hume Fellow and professor of Ornamental Horticulture respectively, at the Florida university.

Copies are available from the Agricultural Extension Service, University of Florida, Gainesville.

Highway Rest Areas Offer Landscape Ideas

A new brochure, "Safety Rest Area Development," which illustrates some of the outstanding rest areas constructed or proposed on the Nation's Federal-aid highway systems, has just been published by the Federal Highway Administration.

Prepared by the Landscape Branch, Scenic Enhancement Division of FHWA's Office of Right-of-Way and Environment, the 28-page publication was designed as a stimulus to those responsible for the site selection, design, development, and maintenance of rest areas.

The brochure is liberally illustrated with photographs—many in color —submitted by various States to show new and imaginative rest area developments.

Subjects covered include site selection, design, site development, scenic qualities, historic aspects, information buildings, information panels, multiple use, buildings, rest room interior, shelters, picnic tables, plantings, utilities, fencing, consideration for the handicapped, and borrow pit lakes.

Copies of "Safety Rest Area Development" may be obtained from the Federal Highway Administration, Department of Transportation, 400 Seventh Street S.W., Washington, D. C. 20591.

Soil Seal Concentrate Accepted by Gov't Buyers

Soil Seal Corporation, Riverside, Calif., reports that their soil stabilizing chemical, known as soil seal concentrate, has been listed by General Services Administration in the new item introductory schedule.

This listing permits all governmental agencies to order the product which is currently in use within domestic agencies and in the Far East.

The concentrate provides surface crustation varying from one-eighth to 1½ inches.

THE ALL-PURPOSE CHOPPER

To Dispose Of Your Branches, Stalks, Vines, Trimmings

LINDIG KAJON CHOPPER

Now there is a 4 and 7 hp chopper to rapidly process branches (up to 2¼" dia.), yard trimmings and leaves. Kajon works just like the large chippers to turn leftover organic material into instant mulch. Bag it for convenient disposal or re-use it as natural fertilizer. Kajon replaces outdoor burning, helps keep our air a little cleaner. Gas engine or electric motor available.

LINDIG Manufacturing Corp.
1877 W. County Rd. C
St. Paul, Minn. 55113

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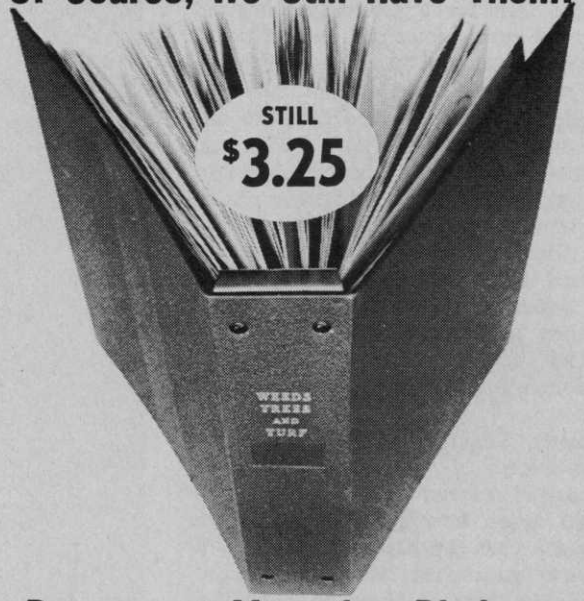
Of Course, We Still Have Them!



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Keep 12 issues of Weeds Trees and Turf in one neat package • Magazine can be easily inserted as it arrives. • Binder protects, gives bookshelf a neat appearance.

Send check or money order to:

WEEDS TREES and TURF
9800 Detroit Ave., Cleveland, Ohio 44102

SPRAY-O-RAMA

Pesticide Applicators Meet in Seattle, Sept. 17-19

SPRAY-O-RAMA, annual conference and show of the International Pesticide Applicators Association (formerly the Pacific Northwest Pesticide Applicators, Inc.) has been set for September 17-19, 1971. Site will be the Sea-Tac Motor Inn, Seattle, Wash.

George M. Harrison, president, reports that continued interest by individuals and groups outside the regional area originally served by the association led to expanding the program and outlet. Commercial pesticide applicators have been invited to attend the '71 session from British Columbia, Washington, Oregon, California, and Florida. Harrison stresses that the group will happily welcome applicators from anywhere in the nation, or the world for that matter.

The organization has taken an active stand nationally in helping guide new pesticide legislation and measures which affect the industry. Their program for this year is geared in the same fashion. Featured will be Dr. Griffith Quinby, a toxicologist who has researched and reviewed the effects of numerous pesticides and findings of recent years.

PACIFIC NORTHWEST PESTICIDE APPLICATORS, INC.

Others include Keith Davey, tree service company president, Dr. Arlen Davison, plant pathologist, Washington State University, Dr. William Hazeltine, Mosquito Abatement District director at Butte County California, Dr. Gordon Edwards, entomologist at San Jose State College, and D. L. D. Halvorsen, National Marine Fisheries Service. Other presentations for the program are still being firmed up according to Harrison.

Harrison will make reservations or furnish information to anyone wishing to attend. He can be reached at 17868 28th Ave., N.E., Seattle, Wash. 98155 (tel. EM 2-9100).

anti des icc ant

number one

Independent laboratory tests prove WILT PRUF 40 to 50 times more effective in stopping excess water-loss than any substitutes. You can have test details on request. Better still, you can try WILT PRUF yourself as a preventive against transplant shock, winter kill, summer scald, city air pollution. You'll find it's a real life saver. There is no second choice! *Write on your letterhead for 50-page technical manual of applications.*

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You might call this the "Long Tom" of chemical spray guns. It has an exceptional range and comes with tips that'll let you shoot a pinpoint, medium or broad spray pattern.

The long barrel on Super Spray gives you both distance and accuracy. The worm-gear control on the barrel end gives you very fine flow control while it prevents hose-busting "water hammer" from sudden shut-off.

You get distance, fine flow control and a variety of spray patterns all in this one rugged professional tool. And Super Spray is available with a swivel connector to prevent kinking of your ½", ¾" or 1" hose.

For all the facts about Super Spray, write today for our free spray hose coupling and accessory catalog.

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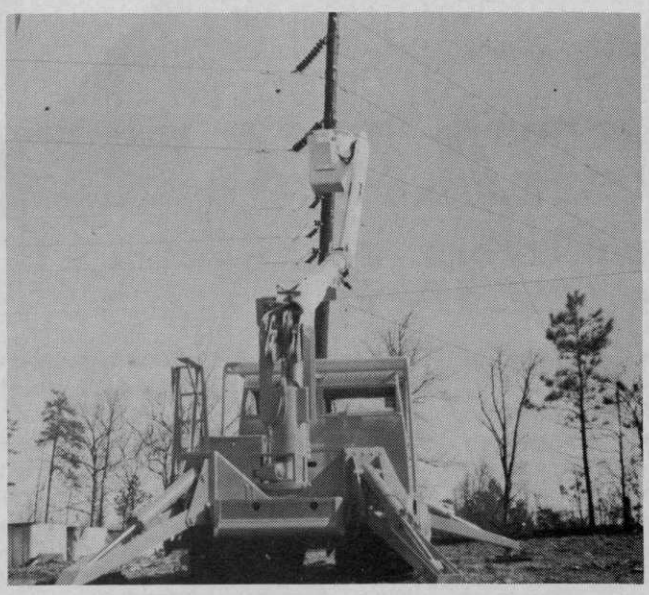
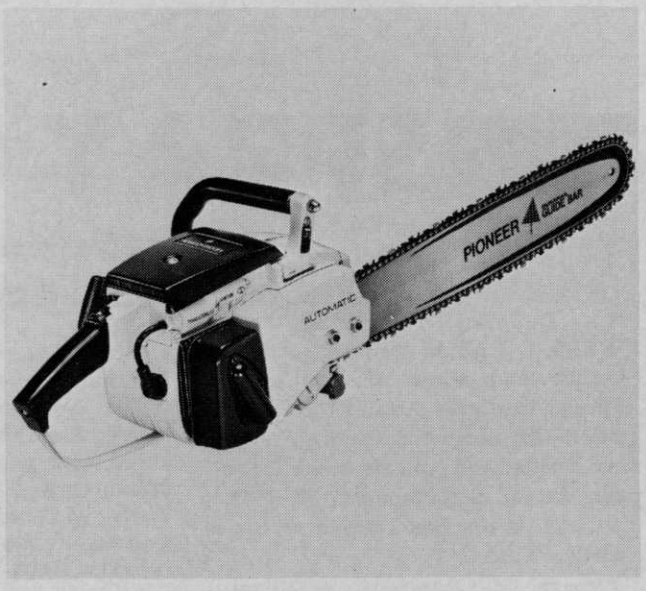


AERIAL DEVICE: Skyworkers, Inc., Conley, Ga.

New product manufactured by Skyworker is the 1044 with 50′ working height and mounted on a Bombardier. Unit is insulated to 100 K.V., equipped with hydraulic tool circuit, and designed especially for rights-of-way clearing. For more details circle, (701) on the reply card.



PROFESSIONAL PULP SAW: Pioneer Chain Saws, Galesburg, Illinois.

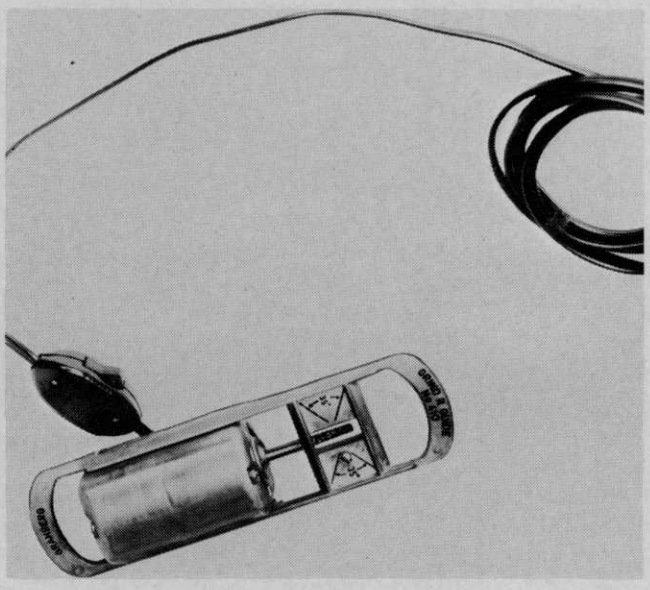
Saw features a transistorized, breakerless ignition for quicker, easier starts and less costly repairs, fuel economy that lets the 3071 cut 40% longer than other chain saws doing the same work plus quiet muffler. Acoustically designed muffler cuts engine noise to a throaty sports-car-like sound. Runs cool with little vibration. Suggested retail price with 16′ attachments is $269.95. For more details, circle (702) on the reply card.

HELMET SYSTEM: Personal Environment Systems, Inc., Glendale, Calif.

Using vehicle-generated electric power, the Rite Whitecap helmet system spins off most airborne particulate matter in a patented self-cleaning centrifugal separator. Any remaining contaminants and odors are eliminated through one or more filtering elements. Purified air is delivered to the helmet, allowing the operator to breathe comfortably hour after hour. Heating or refrigerated air conditioning available if desired. Also available in battery-powered backpack version for off-vehicle use. For more details, circle (704) on the reply card.

WINCH CABLE CRANE: Weldex Corp., Grafton, Mass.

Redesigned, truck mountable, cable crane can cut truck crew in half. One man can safely handle over 2,000 pounds. Series T-25 "Truckranes" provide the first moderately priced units having positive load control. This is accomplished through the non-ratcheting, "no-jerk" action of a hand operated, worm driven winch that will also hold the load fixed in any position without an auxiliary brake. Safety engineered with welded, box beam, telescoping boom construction. For more details, circle (703) on the reply card.

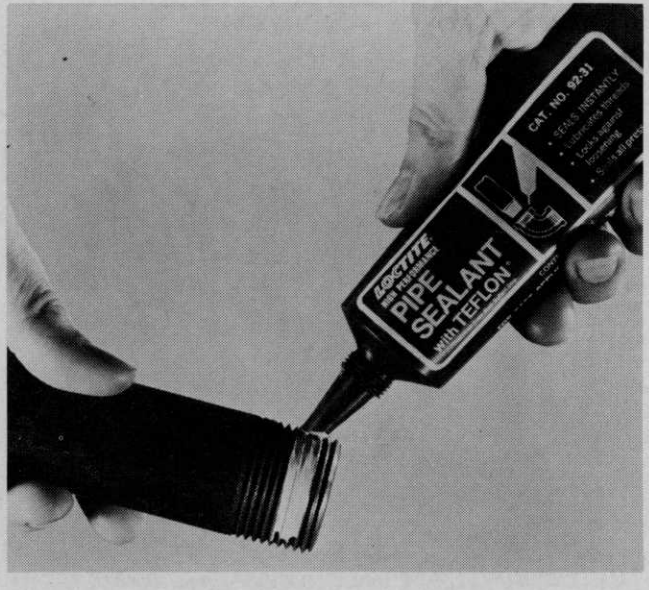


FREEHAND ELECTRIC CHAIN SAW SHARPENER: Granberg Industries, Richmond, Calif.

Small, lightweight tool, only 2½ pounds, sharpens chain saws fast and easy. Engineered with angle and height guides. One adjustment and tool is set to start sharpening. The correct thirty-five degree angle is already set. Sharpens both sides of the chain from one side. For on the job sharpening, 12-Volt system can be by car, truck or tractor battery. Produced for shop work in 110-Volt. For more details, circle (706) on the reply card.

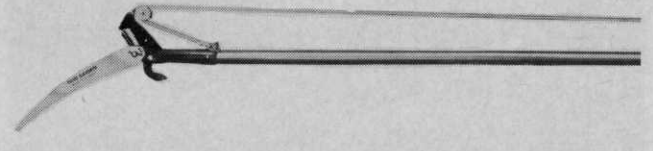
AERIAL TOWER: Mobile Aerial Towers, Inc., Fort Wayne, Indiana.

Personnel tower that elevates workmen in an insulated platform "bucket" up to 40 feet has for the first time been mounted on a track vehicle capable of travel and work over all terrain. Large combinations of tower and track vehicles are available for working heights to 57 feet. Towers are identical to those manufactured for 20 years by Mobile Aerial Towers, Inc. For more details, circle (705) on the reply card.



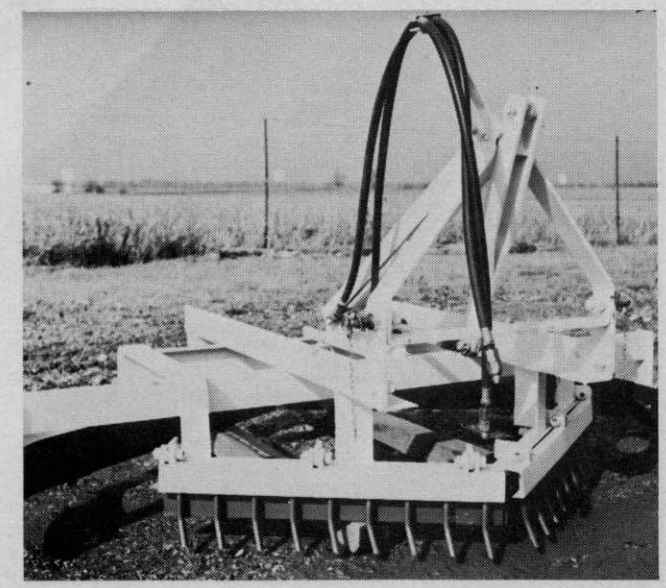
NEW PIPE THREAD SEALANT: Loctite Corporation, Newington, Conn.

A new anaerobic thread sealant with Teflon is listed by Underwriters' Laboratories as suitable for sealing propane, butane and natural gas joints. Material is impervious to lubricants, coolants, fuels, refrigerants and other machinery liquids. According to manufacturer, Pipe Sealant with Teflon seals joints instantly, then hardens in 48 hours to a solid joint that also locks the parts against vibration loosening. For more details, circle (708) on the reply card.



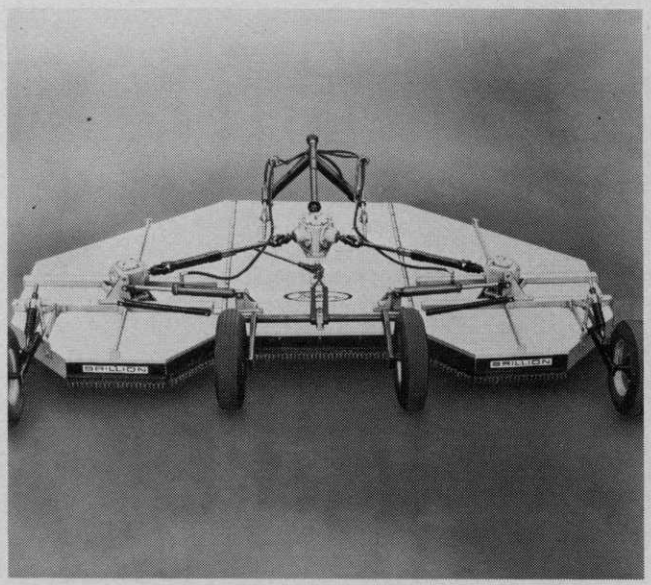
TELESCOPIC POLE PRUNER: Village Blacksmith, Watertown, Wisconsin.

Telescopic aluminum Pole Pruner Model #3981 easily reaches to 12 feet when in use to easily cut limbs and groom trees. To extend or retract the length, just twist lightweight aluminum poles to lock or unlock. Pruner head features free action pulley and spring, austempered cutlery steel blades. Retails for under $14.95. For more details, circle (707) on the reply card.



HEAVY DUTY EQUIPMENT: DriAll Driers, Inc., Attica, Ind.

New levler has been added to the existing line of DriAll, Inc. Heavy duty leveling tool has reversible and replaceable scraper blades, as well as ripper teeth. Unit levels by cutting off and then carrying the excess soil for fill; thus, eliminating windrows, depressions and ridges. In addition, the ripper teeth will loosen the ground that has been packed by tractors, trucks or the like. Levler which fits standard 3 point equipment is 7½ feet wide. For more details, circle (710) on the reply card.



THREE-SPINDLE, FLEXIBLE MOWER: Brillion Iron Works, Inc., Brillion, Wis.

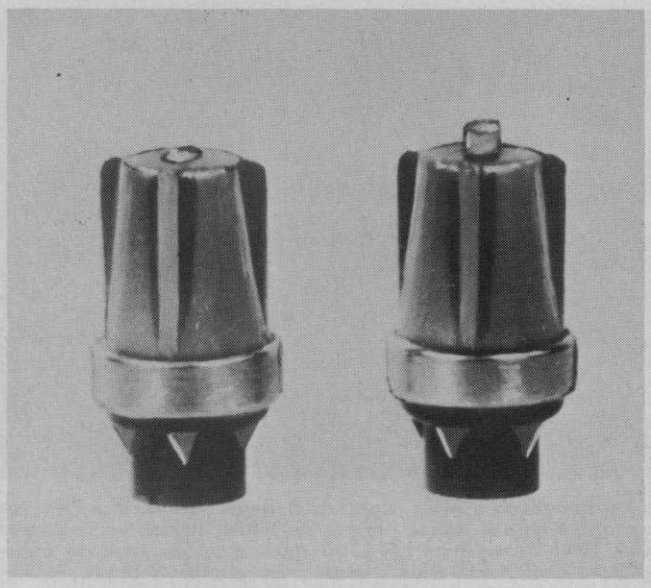
A 15-foot, three-spindle flexible wing mower has been introduced by Brillion. New VersaMower, designated the IR-180, is for maintaining extensive turf areas, such as right-of-ways, airports, recreation sites, golf courses and industrial sites. It can be used with minimum horsepower tractors (above 45 hp). Wings raise hydraulically from the tractor seat. All wheels travel inside the mowing swath. Drawbar is controlled hydraulically. Cutting height adjustable from one to 14 in. For more details, circle (709) on the reply card.

ROCK PICKER: HMC Corporation, Contoocook, N.H.

HMC's Rock Picker finds rocks and removes them while leaving the soil in the field. Features replaceable tines and weld-on connections that fit any size tractor. Manufactured in 4 and 5 foot widths. The five-foot wide model is pictured here. For more details, circle (711) on the reply card.

SMALL PUMP OPERATION: Colt Industries, Kansas City, Kansas.

Faster clean-ups of drives, buildings, grounds, equipment and jobsites as well as fire protection are offered by a new Fairbanks Morse portable high pressure booster pump. Adds 80 psi to service pressure at a discharge rate of 7 gallons per minute. New 58 magnum high pressure utility pump connects with standard hose to existing water supply or draws water from shallow wells, ponds or tanks. A nozzle with feeder is supplied for applying disinfectants, insecticides, plant nutrients and other chemicals. For more details, circle (712) on the reply card.

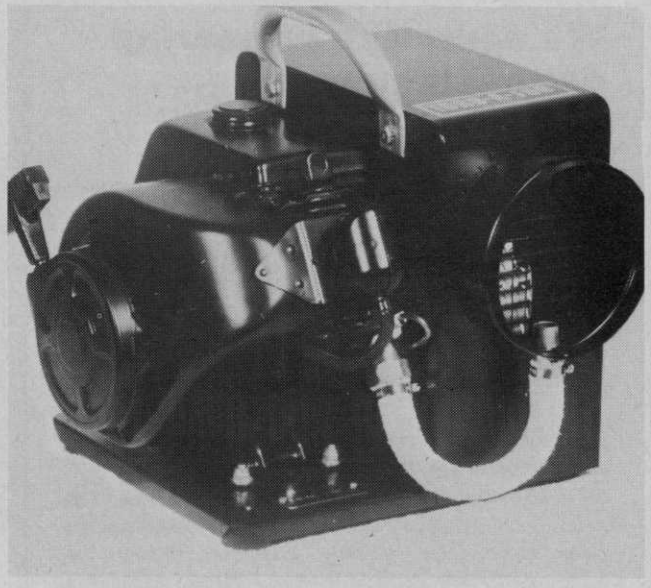


TIRE PRESSURE INDICATOR: Engler Instrument Company, Jersey City, N.J.

Tire pressure indicator, called the INDICAP fits on the tire, replacing the conventional air cap. Small, bright yellow indicator protrudes above the head, showing when the tire pressure is normal. When the yellow does **not** show, the tire is down approx. 10% or more below normal and should be checked immediately. Wide range of tire pressures are available for all equipment. Can be checked in the dark merely by running a finger over the head. For more details, circle (715) on the reply card.

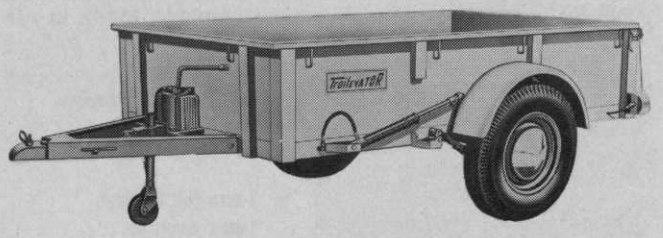
SOD HARVESTING ACCESSORY: Beck Mfg. Company, Birmingham, Ala.

New, low cost cut-off attachment to fit the Beck Sod-O-Matic laying and harvesting system allows operator to cut three 16" wide blocks of sod at a time, and still roll big rolls with the same machine. Easy to change the cutting length from 18" to 81", just by changing sprockets. Cut-off connects to the Sod-O-Matic through a swivel hitch that permits turning or backing. A hydraulic cylinder lifts the blade for transporting or removing from cutting area. Sod-O-Matic is also available in a model that will leave strips of sod for regrowth, and in a model that will cut three 18" wide strips. For more details, circle (714) on the reply card.



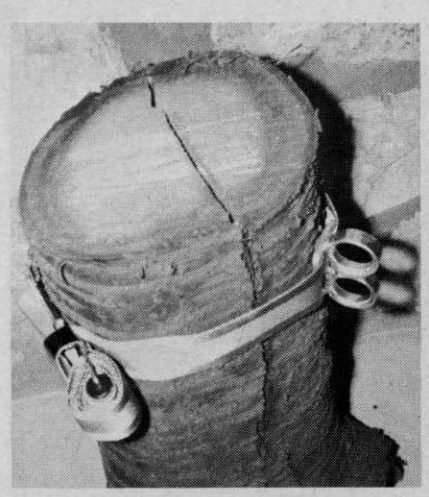
SELF-CONTAINED FOGGER: Middle West Marketing, Inc., Chicago, Ill.

Turb-A-Fog generator is a completely self-contained, hand carryable, portable fogger. Has a "dead-calm" insecticide dispersion range in excess of 200 feet. This is 5 times greater, or further than the pulse-jet engine fogger. Even greater drift ranges can be attained with just slight wind conditions as low 5 MPH. Insecticide vaporization takes place at an operating temperature of approximately 600° F. At this temperature there is no breakdown or weakening of the insecticide. For more details, circle (713) on the reply card.



HYDRAULIC TRAILER: Trailevator, Pinconning, Mich.

Trailevator is a self-lowering, self-elevating hydraulic trailer. Advanced design lets one man handle heavy, bulky items. Equipped with mechanical-hydraulic system which lowers the trailer bed to ground level for easy loading, then lifts and locks in hauling position. Tailgate serves as a heavy-duty loading ramp as well as a secure box closure. Avaliable in several models, with various widths and lengths. For more details, circle (716) on the reply card.



Riggin' buddy.

Golf Course Scholarship — Donald R. Viands (right) of College Park (Prince Georges County) gets a close-up of perpetual honor plaque on which his name has been inscribed as one of two 1971-72 winners of $500 agronomy scholarships sponsored by the Maryland State Golf Association. Holding the plaque is Dr. H. Palmer Hopkins, director of student aid at the University of Maryland.

Tree Surgeon Invents Device for Safe Tree Work

A veteran tree care man, Howard F. Harvey, Jr., has invented a lightweight, compact device which almost eliminates complicated knot work for tree surgeons and riggers.

A special 2-ring slide is used to guide ropes for rigging, overhead lifting, etc. A flat nylon strap (6000 pound test) conforms to and grips securely any shape or texture surface. A special safety belt knuckle can be released with one hand even when under tension. No knot, Harvey says, will do that.

The device can be used to hook up a pulley or hoist any place, for quick tieup and release for a boat, for rope guide in any rigging operation, for quick hookup and release in material handling and jobs of like nature. Retail price is $17.98 from Product Development International. (For additional information, circle reader card No. 718).

Bulk Shipping In A Package!

HANDLE-SHIP-STORE "CONTAINERIZED" BULK FERTILIZER IN TAICON® PVC COATED BAGS

TAICON "Super-Sacks" are reusable bucket-shaped bags of PVC coated polyester fabric that protect contents from contamination or weather, in or out of plant. Many in use 8 years. Guaranteed 2 years.

- Collapsible & Reusable
- Tare weight lightest
- 1-man top loading; 1-man emptying
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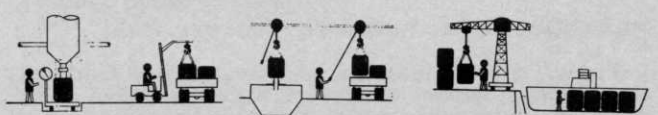
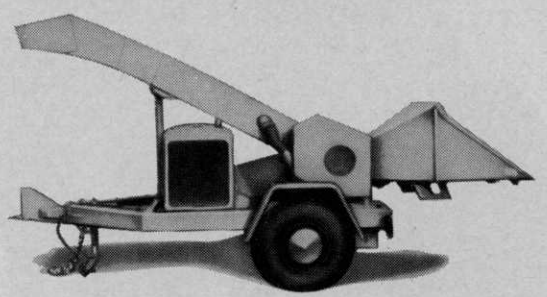


Handle "Super-Sacks" with fork-lifts for easy loading of trucks, rail cars and barges. Write for the BAG Corp. brochure on the "Super-Sack" spreader.

BAG CORP.
9443 SHERWOOD GLEN
DALLAS, TEXAS 75228
AC 214 327-5934

We never tire of hearing our customers brag. . . .



. . . about how much better and more economical our chippers are than anything else they've used.

Of course, we design and build them that way. The heart is the 300-pound flywheel and high-speed, tapered blade which chew smoothly, inexorably, through the work material with the safe flexibility that only Asplundh's special engineering features can provide.

Don't take our word. Ask for the specifications brochure "Asplundh Chippers to Fit Your Need" and for a free, no-obligation demonstration. You'll see why an Asplundh Chipper is best for you . . . and as good as you'd expect from the world's largest tree expert company.

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HAMILTON STREET, CHALFONT, PENNA. 18914
A division of the Asplundh Tree Expert Co.
THE CHIPPER WITH THE TRADEMARK OF QUALITY
"CHIPPER"

For More Details Circle (129) on Reply Card

For More Details Circle (103) on Reply Card

industry people on the move

FRANCIS J. GUSCIO, just retired from the South Atlantic Division of U.S. Army Corps of Engineers, after 38 years of service. Provided leadership and direction of Federal government's expanded aquatic plant control programs, advancing chemical and biological research programs now underway.

* * *

EDDY B. JENNER, operator of Expert Tree Service carrying his name; dead at 65. Had operated tree care company since 1932 until sale to Davey early this year.

* * *

PHILIPPE STABLE, to manager of Sabre Saw Chain's new European subsidiary in Brussels, and responsible for European and Middle East sales. SABRE EUROPE, S.A. becomes third subsidiary of Sabre Saw Chain.

* * *

KNIEP ASSOCIATES, Dover, N.J., a marketing and advertising agency, expands to include services to agribusiness. Executive Vice-President for the new venture is Dr. E. Peter Griffin, previously with Enjay Chemical, and prior to that with Standard Oil of New Jersey.

* * *

THOMAS R. VAUGHAN, chairman of Freeport Minerals, named chairman of the executive committee of The Sulphur Institute, succeeding P. Guillaumat, Societe Nationale des Petroles d'Aquitaine, France.

* * *

CARL HENDRICKSEN, long-time staff member of ETAMCO Industries, Belleville, N.J., to corporate treasurer.

* * *

DR. ROBERT W. CAIRNS, v-p at Hercules retired July 1, accepting appointment as Deputy Assistant Secretary for Science and Technology, U.S. Department of Commerce.

* * *

JAMES W. CARROLL, named national accounts sales manager for Plant Food Department of Allied Chemical. He replaces retiring John Ritter.

* * *

BOARD CHAIRMAN ARTHUR C. TRASK — announces consolidation of Chemicals and Equipment Divisions for Arthur C. Trask Corp. in new headquarters at 7666 West 63rd St., Chicago.

* * *

JULES GOLDBERG, named sales manager for Underground Sprinkler Systems division of Melnor Industries.

* * *

DR. JAMES R. WATSON, named vice-president of Toro. With Toro since 1952, Watson has become nationally known as a turfgrass specialist.

* * *

JAMES J. GALVIN, rejoins W. R. Grace & Co. as v-p of Agricultural Chemicals Group. Previously affiliated with Grace through 1968, he has most recently been v-p for Plumbing and Heating Group of American Standard, Inc.

* * *

JAMES W. FRASIER, to Manager of Sales for Rain Jet Corporation's line of underground lawn sprinklers.

Keeps turf "snuggly" thru any winter

New Conwed® Turf Protection Blanket

As a grounds pro you know the effects of desiccation and low temperature on intensively cultured turfs. And you know the time and expense involved in repairing that damage.

Conwed Turf Protection Blanket helps prevent injury to golf greens and tees, bowling greens, lawn tennis courts, display gardens . . . any cool or warm season turf that's worth protecting.

Apply new Conwed Turf Protection Blanket this fall. It insulates against both winter cold and early spring heat. Protects against dry-out. Helps resist snow mold spread.

Lightweight, easily handled, the blanket comes in 6 x 200-foot rolls weighing 18 pounds.

For full information, write:
Conwed Corporation, 332 Minnesota Street
St. Paul, Minnesota 55101

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Skyworkers, Inc. can supply utilities and contractors with the most complete line of utility equipment in the South.

And Skyworkers, Inc., offers excellent and complete service facilities to maintain this equipment at optimum working efficiency.

Custom-built equipment can be provided to meet specialized needs.

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- Halline Derrick Digger
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A complete service: Sale . . . Lease . . . Rental . . . Repair
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CUTRINE®

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On June 23, 1971, the Environmental Protection Agency issued amended registration 8959-1 for CUTRINE algaecide.

CUTRINE is now registered by the E.P.A. for use in:

POTABLE WATER RESERVOIRS!
FARM, FISH AND FIRE PONDS!
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For More Details Circle (115) on Reply Card

Heavy duty articulated knuckle boom loader with 20-foot reach and 400 degree swing along with powered crushing rolls constitute the heart of Precision Chipper's new Tree Destroyer.

Precision Builds New Unit A Major Model Chipper

Precision Chipper Corporation, Birmingham, Ala., has introduced a new chipper for the market. It is a 67,000 pound unit which handles trees up to 22" in diameter.

Previously the company has built big, stationary chipper units for the forest products industry. With the new restrictions on burning of waste wood products, the company has foreseen a demand for the larger chipper units by municipalities, parks, and tree care companies.

The Tree Destroyer now being marketed is a 75", 3-knife unit powered by a Cummins 310 hp diesel engine. It is the first of three models now on the market and in the planning and construction stages. A second model will be a 48" unit, and the third unit will closely approximate the smaller units which are now standard for the industry.

Bob Smith, vice-president and in charge of marketing for the company, says that the new unit at 67,000 pounds is 19,000 pounds heavier than any other unit on the market. The weight, he says, is important in that it (along with four hydraulic stabilizers) keeps the unit stable under the repeated pounding of heavy loads.

Other features which permit this model to withstand heavy pressure include 20-inch dual-tandem wheels, extra pipes in the curved framing to prevent big tree limbs from hanging up, and a heavy duty articulated knuckle boom loader with a capacity of 7,504 pounds at 15'.

Precision Chipper management team—Bob Smith, vice-president, left, and Harold L. West, president, check hickory chips during demonstration of Model 75 chipper.

USDA Releases New Environmental Bulletin

A new publication by the United States Department of Agriculture, Managing Our Environment, has been released. It has special sections on protecting land, water and waterways, and on management of farm wastes. New areas include recycling food processing wastes. Copies (at 75¢ each) are available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D. C.

Artificial Turf Is Hot Say Agricultural Engineers

Two Auburn University agricultural engineers, have reported that artificial turf areas will heat up to far higher temperatures than adjacent areas of turfgrass.

Reporting at the recent American Society of Agricultural Engineers annual conference, the Alabama university researchers, J. L. Koon and E. W. Rochester, said they found that surface temperatures of the synthetic material during periods of peak incoming radiation were considerably higher than those of turfgrass. "Maximum surface temperature," they said of synthetic material exceeded 150° F. with the corresponding temperatures of turfgrass not exceeding 110° F. "Differences in net radiation above the two surfaces were slight.

Even though the temperature may be only two to three degrees Fahrenheit hotter above the synthetic surface of a playing field in comparison with grass surface, this difference may be important when the temperature is in the critical range.

An area of Astroturf which was installed at Auburn at the edge of a much larger Tifton bermuda grassed field was the site for the studies. "The objectives of the studies were to determine differences in dry-and wet-bulb temperatures, surface temperatures, and net radiation which exists on and above artificial turf as compared with natural turf," the investigators explained.

The Auburn researchers, pointing out that the new surface has required modification of player equipment and playing tactics, offered a table of exercise precautions based on wet-bulb globe temperature. When the temperature ranged between 85 and 90 degrees, all drills in full uniform on synthetic turf should be cancelled, and above 90 degrees all training should be stopped, with "skull sessions" the order of the day.

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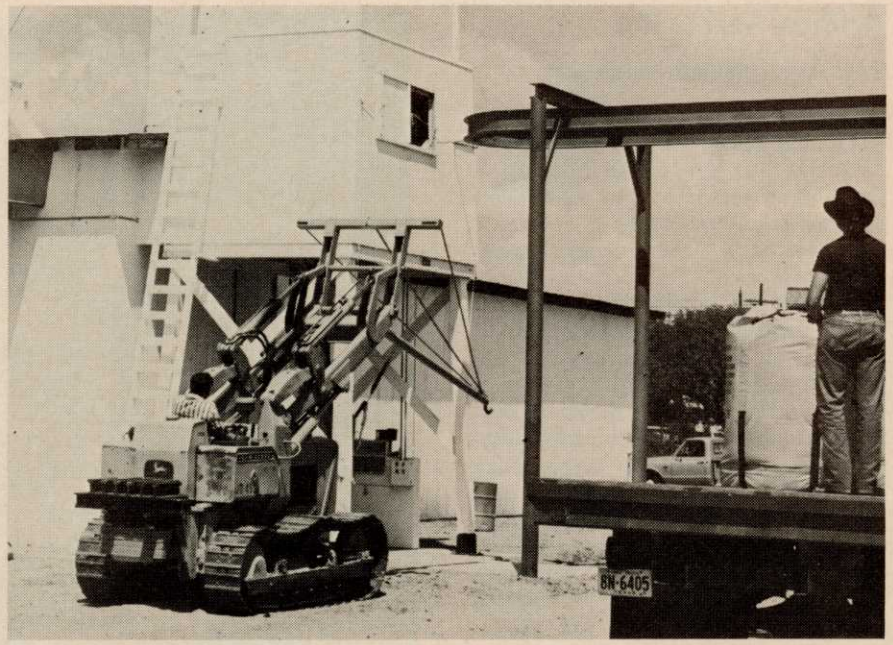
Another fine product of Jacklin Seed Co., Inc.

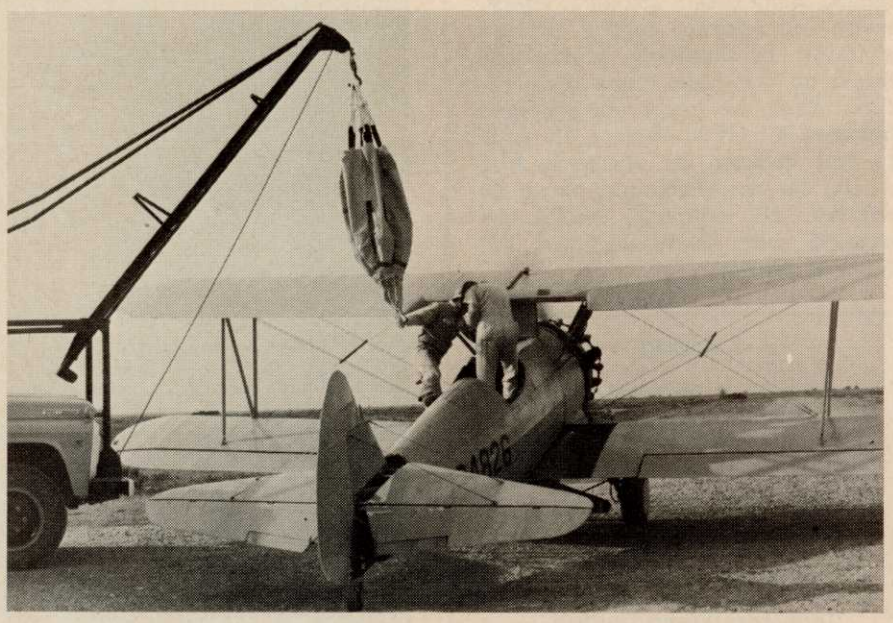


Complete materials handling system is in use at Wintermann & Company, Eagle Lake, Tex., where the super sack has been adopted for handling fertilizers.

BAG *(from page 27)*

economy of bulk shipping. Containers are top-loading with self emptying bottom discharge spouts. Most important is that handling is a one-man operation. The empty bag collapses and folds for return shipping taking up only 10% of the original shipping space.

The ground applicator now being marketed by BAG Corporation is for distribution of fertilizer and/or seed by the broadcast method. It is used in conjunction with a super sack, reusable collapsible container. Equipment in the field is pulled by tractor, jeep, pickup truck, or any type vehicle equipped with power take-off according to the manufacturer. Broadcast rates have varied in actual use from four pounds per acres of material as fine as diazinon to several thousand pounds of fertilizer.



The system was first designed for aerial application of both seed and fertilizers, prior to its new and bigger use in ground application and materials handling.

meeting dates

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Penn State Turfgrass Field Day, Joseph Valentine Turfgrass Research Center, University Park, Pa., Aug. 11-12. (Note: this is a change).

American Society of Agronomy, Crop Science Society of America and Soil Science Society of America concurrent meetings in New York City. Aug. 15-20.

Turfgrass Supplies Irrigation and Equipment Field Day, Fenway Golf Club, White Plains, N.Y. Aug. 24 (1:30 p.m.)

Rhode Island Golf Course Superintendents Field Day, Turfgrass Research Area, URI campus, Aug. 25.

Rhode Island Lawn and Utility Turf Field Day, Turfgrass Research Area, URI campus, Aug. 26.

National Association of Professional Gardeners, Annual Conference, Princeton Inn, Princeton, N.J. Aug. 28-30.

Virginia Tech Turfgrass Field Days, V.P.I. and S.U. Turfgrass Research Center, Blacksburg, Va., Sept. 8-9.

Michigan Turfgrass Field Day, MSU, East Lansing, Mich., Sept. 9.

Alabama-Northwest Florida annual turfgrass short course in cooperation with Auburn University, Auburn, Ala. Sept. 9-10.

Ohio Turf and Landscape Day, Ohio Agricultural Research and Development Center, Wooster, Ohio, Sept. 14.

Florida Turf-Grass Management Conference, Pier 66, Ft. Lauderdale. Sept. 19-22.

Minnesota Shade Tree Maintenance Short Course, St. Paul campus, UM, St. Paul, Minn., Sept. 23.

Midwest Regional Turf Foundation field day, Purdue University, Lafayette, Ind. Sept. 27.

30th Annual Short Course for Roadside Development, Columbus, Ohio. Oct. 4-8.

Society of Municipal Arborists, 7th annual meeting, Empress Motel, Asbury Park, N. J. Oct. 6-8.

Helicopter Association of America western operators management seminar at the Marriott Inn, Belmont, Calif., Oct. 19-23.

Missouri Turfgrass Conference in the Memorial Union, University of Missouri, Columbia. Nov. 3-4.

Wisconsin Golf Turf Symposium at the Pfister Hotel, Milwaukee, Nov. 4-5.

Arizona Parks and Recreation Conference, annual meeting, Holiday Inn, Tempe, Ariz., Nov. 17-18.

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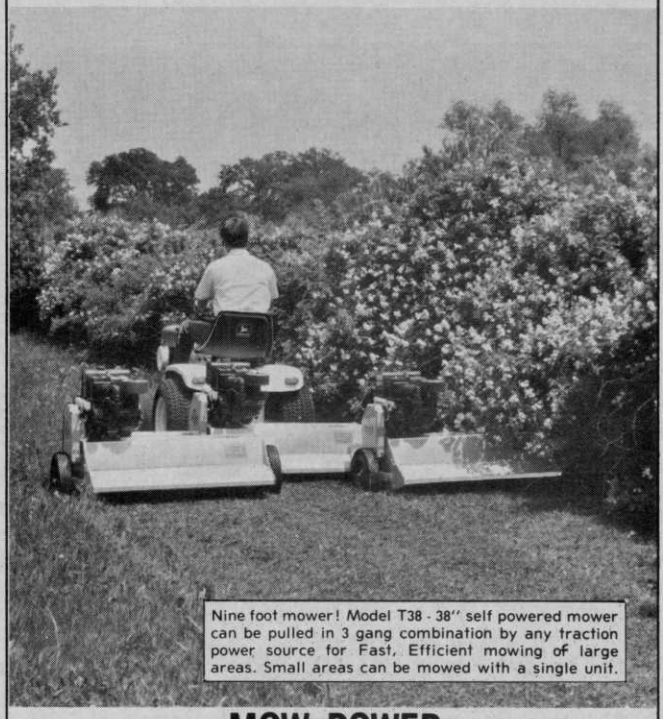

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Growers Visit Michigan

Sod Research/Field Tour

More than 150 out-of-state sod growers joined an equal number of individuals from the Michigan growers sod industry for a combined field day and sod tour at Lansing, Mich., this last month.

The event was two-fold—a Michigan State University sod producers field day, and a summer meeting of the American Sod Producers Association.

Michigan, with 150 plus growers producing over 20,000 acres of sod yearly, has research at the MSU station to back the industry. Primary research shown visitors was on muck soil, yet much of the new data presented applied far more widely.

The recently developed Michigan sod strength and sod rooting evaluation tests were stressed in many of the studies. The sod strength test measures the ability of sod to withstand harvesting and handling. In short, the test shows how well a strip of sod will hold together during lifting, moving, and being transplanted.

The sod rooting test shows how well sod can be expected to root in a new soil when transpalnted. In the rooting test, sod is transplanted and then after 25 to 50 days is pulled up. The force in pounds required to lift the sod is the measure of sod rooting ability.

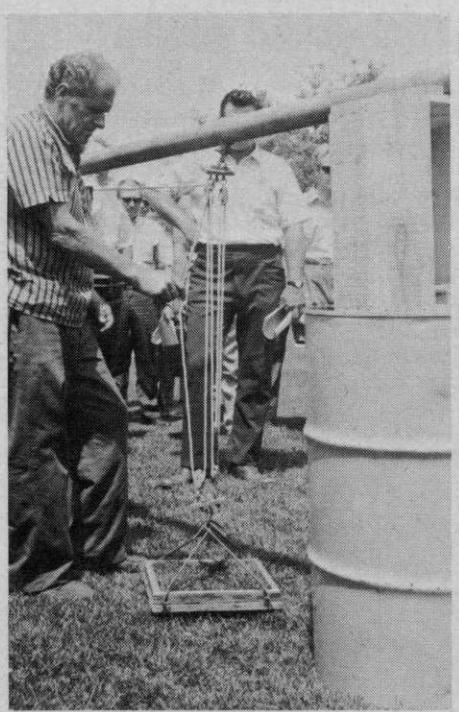
Sod strength tests showed that blends of the newer varieties were generally superior to pure mixes and far better than the older common bluegrass varieties. Yet, rooting characteristics of the older, common Kentucky varieties proved excellent and often better than the new varieties and blends.

However, researchers pointed out that once laid, if sod is managed well (proper fertilizer and moisture) then any of the varieties or blends tested can be expected to perform satisfactorily.

Studies during the past three years show that as little as 5% Merion, on a seed weight basis, can be planted in a mixture with Pennlawn red fescue and still provide adequate sod strength. However, 20- to 30% Kentucky bluegrass is needed to achieve adequate uniformity of stand in terms of leaf texture and nonbunchiness of the bluegrass in the red fescue dominant turfgrass community.

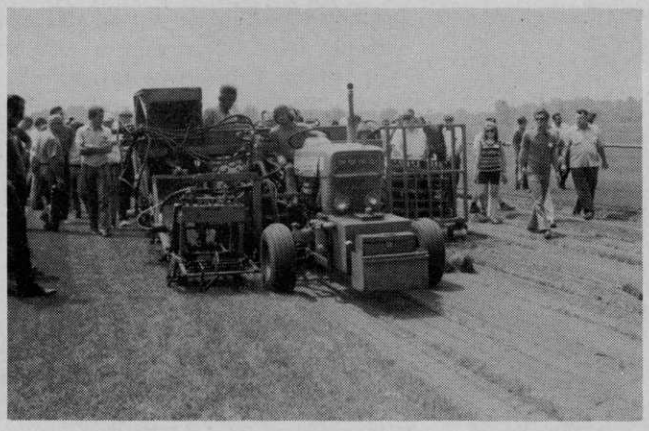
Control of *Fusarium* blight on Merion Kentucky bluegrass drew the attention of many sod growers. Professor J. M. Vargas, Jr., in his report said that Tersan 1991 (DuPont) gave excellent control if applied correctly. Successful treatment, he said, for this and similar products being tested, depend on getting the chemical down into the root zone. This is done by spraying on the sod, and following up with an inch of water to literally "water-in" the chemical. Dr. Vargas stressed the importance of soaking the chemical down into the roots before it has time to dry. Five treatments of this and others tested were applied at bi-weekly intervals. With the benomyl (Tersan 1991), 8 ounces per 1,000 sq. ft. were used. Another promising fungicide for control of *Fusarium* blight is Pennwalt 1771.

Sod rooting test.

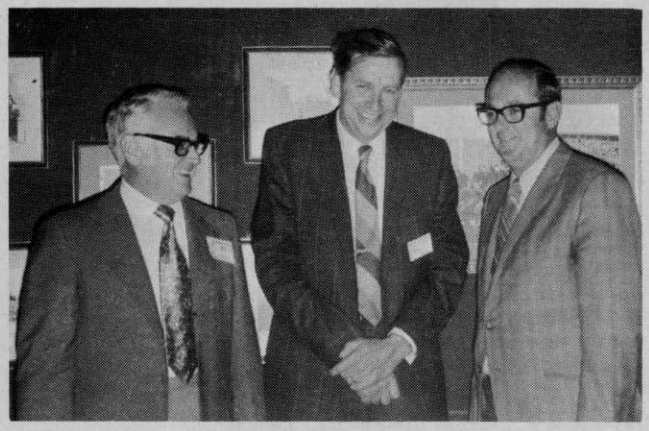


Dr. James B. Beard

D. P. Martin



Bluegrass Sod Farm harvester in action during sod tour. Besides this farm near Allendale, growers visited Ludema Sod Farms at Clarksville, and Baldwin Sod Farms at Leslie and Stackbridge.



New ASPA board members William Latta, left, and John Nunes, right, pose with Tobias Grether, reelected president at the Michigan summer meeting. Plans are to stage major winter meeting in California.

This product, however, has only undergone one test at the 8 ounce rate in the Michigan studies. Several other similar new products including Daconil and Elanco experimental are under test.

Dr. Jim Beard reviewed his post harvest sod heating studies. In short, Dr. Beard said that temperature was the only significant problem in shipping sod. The basic source of heat is respiring grass blades. Thus, he said,

Table 1. Sod strength evaluations of nine Merion Kentucky Bluegrass-Pennlawn red fescue mixtures.
(6 x 15' plots; 3 reps; seeded August 26, 1968, and September 17, 1969)

Seed Mixture on percent by Seed Number Basis*		Michigan Sod Strength Test (in pounds)			
		1968 Seeding Tested in		1969 Seeding Tested in	
Merion Kentucky Bluegrass	Pennlawn Red Fescue	1969	1970	1970	Ave.
100(100)	0(0)	118	92	85	98
90(70)	10(30)	123	111	99	111
80(50)	20(50)	131	94	90	105
70(41)	30(59)	137	103	87	109
60(28)	40(72)	136	128	92	119
50(20)	50(80)	124	112	117	118
40(15)	60(85)	149	132	95	125
30(10)	70(90)	135	134	106	125
20(6)	80(94)	108	134	95	112
10(3)	90(97)	109	106	71	95
0(0)	100(100)	109	54	59	74

*Percentages in parentheses are on a seed weight basis.

Table 2. Sod strength evaluations of eleven Kentucky bluegrass blends.
(6 x 15' plots; 3 reps; seeded August 26, 1968, and September 17, 1969)

Bluegrass Blend Components						Michigan Sod Strength Test (in pounds)			
						1969 Seeding Tested in		1969 Seeding Tested in	
Merion % of blend	Newport % of blend	Park % of blend	Fylking % of blend	Windsor % of blend	Prato % of blend	1969	1970	1970	Ave.
			33	33	33	128	105	119	117
33		33	33			106	106	101	104
50					50	94	105	101	100
50			50			109	97	88	98
50		50				83	106	106	98
50				50		93	98	99	97
33			33	33		93	106	84	94
	33	33	33			114	74	91	93
	33			33	33	100	79	95	91
33	33	33				81	97	84	87
50	50					91	88	80	86

the shorter the cut before harvesting, the less the heating problem. Also, he pointed out that grass treated with less nitrogen prior to lifting and transporting suffers less deterioration from heat.

Of more than passing interest was Dr. Beard's report on the use of grass clippings. The MSU station has developed research dealing with pelletized grass clippings. While of potential practical use for livestock, small animal or poultry feed, the pelletized clippings, may prove to be an exciting product when used for laboratory animal litter. Dr. Beard pointed out that 60 million lab animals are used in this country and that their litter is changed about twice weekly. Grass clippings conceivably could compete with the ground corn cobs, shavings, and similar products now in use and costing about $70 to $100 per ton.

ASPA members reelected Tobias Grether, Cal Turf, Camarillo, Calif., as president. They also set their coming annual meeting dates as February 22-24, with the convention to be held in California near Disneyland. Details will be forthcoming as plans for the winter session are firmed up.

Other officers and directors were named as follows: Jack L. Kidwell, Kidwell Turf Farms, Culpeper, Va., vice-president; William Latta, Princeton Turf Farms, Kansas City, Mo., secretary; George Stewart, Karandrew Turf Farms, Suffield, Conn., treasurer. New directors elected were: John Nunes, Nunes Turfgrass Nurseries, Patterson, Calif., and Latta.

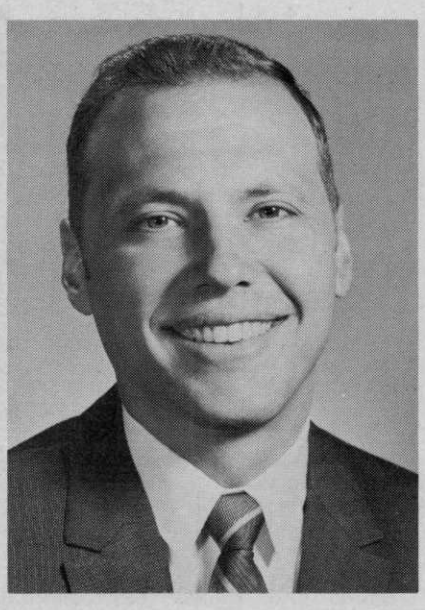
Spence Davis Co-Authors Insect, Disease Leaflet

A new leaflet on insect and disease control for lawn and turf areas has just been released by Rutgers University.

Authors of the publication include Plant Pathologist Spencer H. Davis, Jr., who besides being a staff member at Rutgers also serves as executive director of the Consulting Arborists Association, and Entomologist Louis M. Vasvary.

Subject matter includes a section on chemical pesticides, special lawn pest problems, lawn insects and insecticides, lawn diseases, and fungicide use on lawns.

Single copies are free by writing Bulletin Clerk, Ag Communications, P.O. Box 231, New Brunswick, N.J. 08901.



Doyle W. Jacklin

Doyle Jacklin Elected President Seed Trade

Doyle W. Jacklin was elected president of the Lawn Seed Division of the American Seed Trade Association at a St. Louis, Mo., annual meeting. He is sales manager for Jacklin Seed Company, Dishman, Wash.

The American Seed Trade Association is a national and semi-international organization which promotes the general business interests of persons, firms and corporations engaged in the seed industry in the United States, Canada, and Mexico. Headquartered in Washington, D. C., the organization considers and attempts to solve problems of the seed industry, and to promote a high standard of business ethics in the seed trade.

Jacklin will serve as president of the Lawn Seed Division for a period of one year, during which time he will also assume a directorship of the association.

Ohio Turfgrass Conference Firm For Dec. 7-9

Executive Secretary Robert W. Miller reports that the Ohio Turfgrass Foundation has set firm dates for their annual Conference and Show. Dates are December 7-9.

The show which has become probably the largest single state show annually attracts both exhibitors and show visitors on a regional and national basis. This year it will be held at the Sheraton-Cleveland Hotel, Cleveland, O. Exhibit details are available directly from Miller, 1827 Neil Ave., Columbus, O. 43210.

Lofts Pedigreed Seed Retains Name of Baron

Peter S. Loft, president of Lofts Pedigreed Seed, Inc., Bound Brook, N. J., has announced that the company will retain Baron as the name for the company's new Kentucky bluegrass variety, which was recently released to the industry.

The name, Baron, was found after being registered and marketed on a worldwide basis, to be in conflict with a Dow Chemical Company herbicide by the same name.

Loft reports that Dow, headquartered at Midland, Mich., released the name at a very fair price and he commended the company for its cooperation and fine attitude in the negotiations.

Loft states that the new crop of Baron looks particularly good and will be available shortly as certified Baron Kentucky Bluegrass.

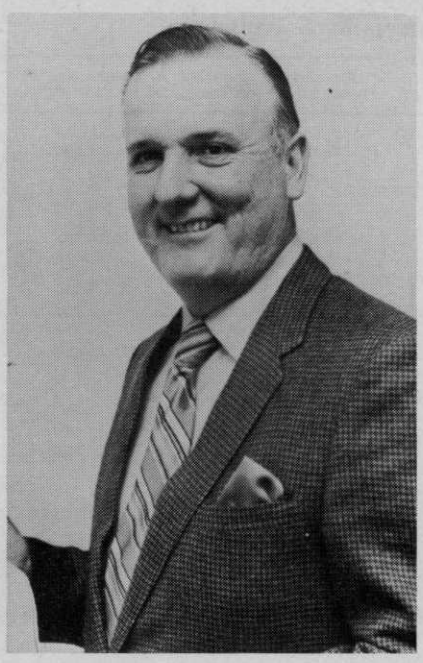
LTV Aerospace Corporation Acquires R. L. Wilson Co.

R. L. Wilson Co., Inc., known in the weed control industry for its FoamSpray, has been acquired by LTV Aerospace Corporation, Dallas, Tex.

Wilson supplies facilities support service for the petroleum and petrochemical industries. The Wilson acquisition will operate as a wholly owned subsidiary according to Forbes Mann, LTV president. Robert L. Wilson, Sr., company founder, 69, will shortly retire but will remain as a consultant for a period of time.

The Wilson agri-chemical division, formed two years ago, produces fungicides, herbicides and insecticides that are marketed nationally for industrial, home and garden use.

This division recently introduced a chemical additive that causes pesticides to form larger droplets and foam when being sprayed. Called FoamSpray, it reduces wind drift and helps hold chemicals on foliage for longer periods of time.



Making it official: Golf course builder Bob Chakales of Richmond, Va., president-elect of the Golf Course Builders of America, is all smiles as he examines the association's new membership certificate.

Beseler tree sling in use on large size tree.

Tree Sling For Big Trees

Herman F. Beseler, Minneapolis, Minn., now reports his tree moving equipment company is making a sling which will handle tree balls up to 8 feet in diameter and weighing 50,000 pounds. This is the Model F. Lesser sized models handle weights of 22,000 and 37,000 pounds. Slings for smaller sized units have always been available.

Beseler reports that the patented slings feature a wide section design to minimize damage to the ball, and high strength wire rope cables with new compact fittings.

Musser Turf Foundation Granted Tax-Exempt Status

Tax-exempt status has been granted by I. R. S. to The Musser International Turfgrass Foundation of the H. B. Musser Turfgrass Fellowship, Inc.

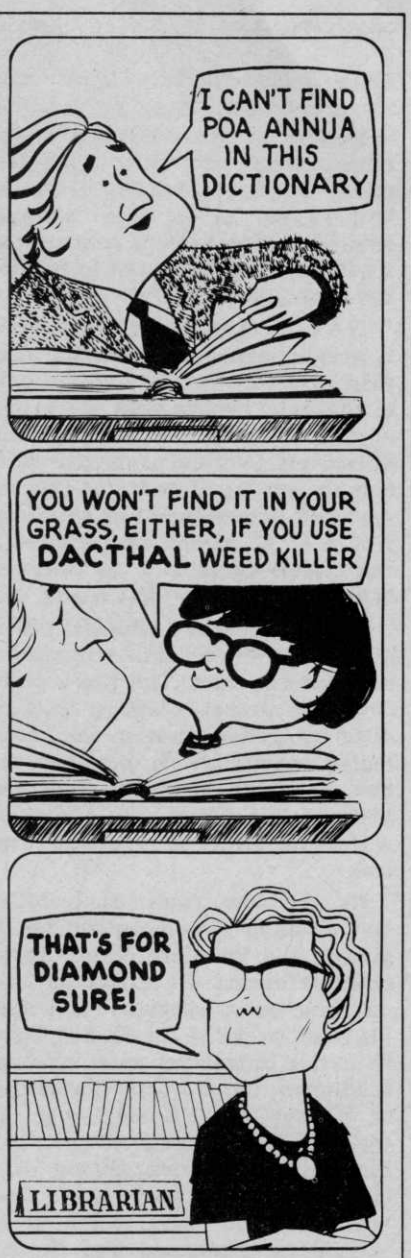
President F. V. Grau reports that contributions are tax exempt and may be made out to MUSSER TURFGRASS FOUNDATION and sent to Mr. Ben O. Warren, Secretary, Palos, Park, Illinois 60464.

As funds grow the income will be expended for Fellowships leading to the Ph.D. degree in Turfgrass Management. The Musser Foundation is global in scope and candidates for the degree will be screened from every corner of the world on a non-discriminatory basis. Research institutions likewise will be carefully chosen to complement the selected field of study.

Officers and directors all serve without salary and pay their own travel expenses to meetings.

The Musser Foundation was started by a group of his friends in the Pennsylvania Turfgrass Council who valued highly the accomplishments of this dedicated teacher and researcher. The late Prof. Musser long will be remembered for Pennlawn fescue; for Penncross bent; for his reports on fertilizers, crownvetch, weed control, turfgrass management studies; and for his authorship of the U. S. G. A. sponsored book "Turf Management." The effects of his work, like his students, have gone 'round the world and have benefited turfgrass lovers in every walk of life.

Questions may be directed to Dr. F. V. Grau, President, Box AA, College Park, Maryland 20740, or to Dr. J. M. Duich, Secretary, 21 Tyson Building, University Park, Pennsylvania 16802. Directors of the relatively new foundation are: Dr. Fred V. Grau, President, Howard R. Taylor, Jr., First Vice President, Dr. James R. Watson, Second Vice President, Dr. Joseph M. Duich, Secretary, Ben O. Warren, Treasurer, Walter D. Anderson, Warren A. Bidwell, Bob Dunning, Arthur V. Edwards, Stan A. Frederiksen, Ferdinand Garbin, Tobias Grether, Harold K. Howe, Dr. Henry W. Indyk, Arden W. Jacklin, Dr. Russell E. Larson, William E. Lyons, Thomas C. Mascaro, Dr. Gene C. Nutter, Alexander M. Radko, C. E. Robinson, Eberhard R. Steiniger, John I. Sutherland, and Albert W. Wilson II.


I CAN'T FIND POA ANNUA IN THIS DICTIONARY
YOU WON'T FIND IT IN YOUR GRASS, EITHER, IF YOU USE DACTHAL WEED KILLER
THAT'S FOR DIAMOND SURE!
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Keep *Poa annua* from showing up in your turf. Use Dacthal® W-75 turf herbicide—the pre-emergent herbicide that controls most annual grass and many broadleaf weeds. Yet it's safe even for new grass when used according to label directions.

One early spring application is sufficient to check most weeds. But with *Poa annua* and other late germinating grasses, try a second application in late summer. Always read the label before using any herbicide.

Dacthal for turf is also available in 5% granules. Ask your dealer about Dacthal or write Agricultural Chemicals Division, Diamond Shamrock Chemical Company, 300 Union Commerce Bldg., Cleveland, Ohio 44115.

Diamond Shamrock Chemical Company

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alone." The "added effect" from these mixtures does not respond uniformly on all weed species. Some species show very little synergistic effect. Dandelion, readily controlled with 2,4-D, is in this category, where any increase in control over 2,4-D alone can be traced to the dosage of the added MCPP.

The control of broadleafed weeds is greatly expanded from the mixture of 2,4-D, MCPP and dicamba to the point where with the proper adjustment of ratio and dosage only Speedwell (Veronica) is still difficult to control. Because of this unexpected improvement in weed control, a U. S. patent was granted to the Green Cross Div. of Sherwin-Williams Company of Canada, Ltd.

These increased herbicidal effects do not carry over into ornamentals and grass species. The three herbicides are probably acting on three different systems within the broadleafed weeds. It is possible that one herbicide while having very little visible effect, could make a weed susceptible to a second chemical.

At the low rates used, MCPP and dicamba have no effect on the grasses and therefore do not apparently influence the effect of 2,4-D on these grass species. Field studies in all areas of the United States with the three-component mixture, conducted by Gordon Corporation of Kansas City, Kansas, who are the exclusive makers of this mixture in the United States, have clearly demonstrated that 2,4-D when used at high ratios, is injurious on Bentgrass and St. Augustine grass. The tests do show that successful weed control can be obtained without injury on these two grasses by reducing the 2,4-D component and increasing the MCPP portion of the three-way mixture.

The product, Banvel D (dicamba) has had adverse publicity regarding injury to ornamentals. It is alleged that the injury occurs when the dicamba is leached into the root zone of the ornamental plant when rain follows dicamba application to turf. While it cannot be argued that injury has not occurred, the amount of dicamba applied may well have been misrepresented Careful field studies indicated that injury can occur when ½ pound per acre of dicamba is applied to the ground at the base of an ornamental and then watered in. At these rates, a few ornamental plants showed injury symptoms and recovered. However,

Table 1: Chemical treatment on pigweed.

CHEMICAL	Amount of Chemical in ounces per acre needed for 90% control of Redroot pigweed.	
	Used alone	Used in combination
2,4-D	10.2	1.37
MCPP*	30.0	0.68
DICAMBA	3.0	0.49
Total Chemical Per Acre	43.2	2.54

*d. isomer only

usage on home lawns at the ½ pound per acre rate of dicamba is not necessary when used in combination with 2,4-D, MCPP and dicamba, less than 1½ ounces per acre of dicamba is required for excellent weed control, with complete safety.

The method of application also has a great influence on the safety and performance of a product. When a product is applied as a spray, the droplets of the spray are largely intercepted by the weed and turf foliage and very little chemical actually reaches the surface of the ground. The mechanical barrier effect of the grass thus eliminates dicamba injury from liquid sprays at these low rates.

Seven years of use in Canada and other countries and usage to date throughout the United States has not resulted in a single report of injury to ornamentals. However, the application of a "weed and feed" or granular product goes through a slightly different mechanical filtering process during application. The heavier fertilizer particles fall through the grass and come to rest on the ground. If the chemical is absorbed into these particles, it may be carried to the ground surface to be gradually released as the particle breaks down.

The Dimethylamine salt formulation commonly used to spray on fertilizer to make a dry "weed and feed" product is totally water soluble and moves freely in the soil. The acid form of dicamba, however, is much less soluble in water. It apparently becomes tied up in the soil surface and resists leaching. A dry dust concentrate of controlled particle size can be made and dry mixed with the fertilizer using the acid form of dicamba. Properly prepared, the acid formulations are equal to, or perhaps more effective, as herbicides than the Dimethylamine salt. Made in this manner, the acid herbicides are on the surface of the fertilizer in their own particle form and not absorbed into these fertilizer particles. In this form, much of the dust adheres to the weeds as the "weed and feed" product is applied. This has a dual safening effect on the dicamba. Not only is less material reaching the ground because the acid dust is collecting on the leaves, but the dicamba acid which does reach the ground, remains on the surface.

The proper usage of mixtures can therefore result in substantial improvement in weed control using minimum amounts of chemical. Greater numbers of weed species can be controlled with increased safety to grasses and ornamentals. In the case of 2,4-D, MCPP and dicamba mixtures, there are clearly demonstrated synergistic effects which give far greater weed control than would be expected considering the spectrum of each herbicide alone. In the case of safety to grasses, it is possible to adjust the amount of each component, reducing those which are damaging to grass and increasing those which are safe. As far as ornamental injury from dicamba is concerned, there is no increased effect from the mixture since only the dicamba is root absorbed.

Also due to greatly reduced dosages the amount of dicamba applied per acre is so low that no injury can result.

Further safening effects can be obtained with "weed and feed" products by utilizing the acid formulations.

Without the benefit of synergism, the indiscriminate use of mixtures can be dangerous. If a full dosage of each ingredient is used, not only would cost be prohibitive, but an unnecessary amount of chemical would be introduced into our recreational environment.

Note:
Mixtures of 2,4-D, MCPP and dicamba under the Green Cross patent are available under the trade names of Trimec, from Gordon Corporation, Kansas City, Kansas, and turf, lawn and garden marketers.

FMC's Tandex® Registered As Brush Control Agent

Tandex®, a new soil sterilant herbicide developed by FMC Corporation, Niagara Chemical Division, Middleport, N.Y., has been granted registration as a brush control agent by the Environmental Protection Agency.

Tandex in 10 percent granular form may now be used to control oaks, manzanita, and chamise on non-crop land. It had previously been registered for use in wettable powder and 4 percent granular formulations for weed and grass species and such brushy plants as sumac, poison ivy, and brambles.

The new label permits Tandex 10 granules to be applied at rates of 2½ to 5 ounces (5-10 tablespoonsful) per tree, shrub or brush clump. The company recommends that granules be spread under the foliar canopy or placed near the base of small trees or brush. For larger trees, the recommended useage calls for applying in several places.

The chemical has a very low order of mammalian toxicity, absence of fumes, and a long period of activity, according to FMC data.

Ohio Turfgrass Foundation To Sponsor Golf Tournament

A golf tournament in the interest of research is being sponsored by the Ohio Turfgrass Foundation.

Set for sometime in September, the tournament will be played at the Scarlet Course at Columbus, one of the Ohio State courses.

The OTF has consistently financed research in the turfgrass field since its founding. Most profits from the major turfgrass conference and show each year have traditionally gone for this purpose.

The tournament details are now being finalized. Right now, two shotgun starts (morning and afternoon), full handicap for all participants and an entry fee to the Ohio Turfgrass Foundation; four-man teams will be competing for four places with a total of $1,000 in prizes. A free steak dinner for all participants and free refreshments on the course will be furnished. Entries will be limited to the first two hundred players (first fifty teams). Entries will be selected on a first come basis.

Anyone wishing to play may contact Paul E. Mechling, 5201 Corey Road, Sylvania, Ohio 43560.

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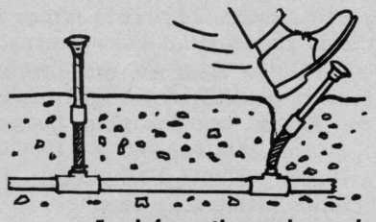

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Samuel Cabot

Problem?

I believe we can resolve the slight problem created by the printing of the crown gall article in the June, 1971 issue of "Weeds, Trees, and Turf." If possible, could you print a correction of the spelling of my name (middle initial "K) and a brief statement explaining the origin of the information contained in the article. A statement to the effect that the "article was condensed from a talk presented at the annual Ohio Nurserymen's Short Course, Columbus, Ohio, January 28, 1971" should suffice.

I am indeed pleased that you considered my talk worthy of publication. We do, however, have certain procedures to follow before we can publish an article which makes this situation a little unusual. But, I believe that we can resolve the problem with the above correction.

Thank you for your cooperation in this matter.—W. K. HOCK, Research Plant Pathologist, USDA, ARS, Delaware, Ohio.

Editor's Comment: We see no problem in publishing this information on crown gall. Either it is public information or it is not.

The data on crown gall printed in the June issue was taken directly and verbatim from a joint Ohio State University and USDA information piece which is published regularly in season and known as "Nursery Notes." The by-line from the official release also carried the wrong middle initial and this we regret.

However, in the public interest we feel we must make our position as a publisher clear. We do not condone the not uncommon practice of a public employee using public funds for research and then assuming the right to determine who will publish and in what order. The original telephoned objection which preceded the above letter referred to the fact that first publication of the crown gall data was to be in an association publication—this after the data was made public via a speech and via a government information sheet.—A. E.

Park Executive Opinion

The "OPEN LETTER"—CODE OF ETHICS letter submitted by a group of Bay Area Park Directors and reprinted in your Weeds, Trees, and Turf issue of June 1971 expressed the opinion of hundreds of Park Executives. It is unfortunate that our fellow park men were unaware of the letter. I can assure you many signatures would have been affixed to the document.

Enclosed comments are from a letter sent to the American Park and Recreation Society three years ago in line with the thoughts expressed in the "OPEN LETTER."

My letter was ignored in its entirety by the American Park and Recreation Society in that not a word was printed as had been requested.

My comments:

1. Since the merger of the American Institute of Park Executives and the Recreation Society, a gradual downgrading of the Park Exec. is becoming more prevalent.

2. Demands by today's—civic organizations — requesting Park and Recreation Directors, place a higher priority on a recreation background than the more technical park background.

3. From an academic viewpoint—the scholastic requirement for a degree in recreation is far less demanding than a similar degree in agriculture.

The scope of endeavor of the park man is heavy with the technical requirements.

To cite a few:

Equipment of the trade, playground equipment planning, silviculture, agronomy, botany, pomology, entomology, chemistry, forestry, hydraulics, turf diseases, insecticides, herbicides, fungicides, landscape architecture, geology, floriculture, design and development, golf course maintenance and development, marina design and development, tree surgery, and engineering.

4. The increasing demand for recreation or open space the past 4 years has led many civic organizations, primarily city and county to draw the conclusion that the "primo facie" of a director is a recreation background.

NOTHING can be further from the FACT—WITHOUT THE PARK FACILITIES YOU HAVE NO RECREATION.

Without the technical ability of the park men you have no parks to supply the facilities.

5. We do not intend herein to belittle the Recreation Director. He has a job to do, many perform to the best of their ability. It is one thing to know how many pounds of air go into a football, or how far apart the yardage markers should be. It is another thing to have a fine field of turf free of disease, of weeds, or mud to play the game on.

6. Many cities and counties that have set a pre-requisite on recreation, in preference to park or agricultural background have within 6 to 8 months after the initial employment of a recreation oriented director been forced to employ an asst. director to actually administer the parks and the requirements of the community.

Does this procedure amplify the basic principles of economical or efficient government?

We do not think so—

The primary purpose of our comments was an attempt to illustrate the dismal failure of merging into one, two factors, with total disregard for the many years of study, responsibility and work that was required to obtain the luxury of administrative ability and experience.

Political and civic leaders have become aware of the ecological and environmental crisis. They are also aware of the vital part the Park Director plays in its success or failure. ROBERT G. PELUSI, 2291 Streblow Dr., Napa, Calif.

Park Assn. President Speaks

In the June, 1971, issue of **Weeds, Trees and Turf** you have printed a letter from Allan W. Hammer, Pasco Balzarini, Jules L. Francard, Ted Harpainter and Grayson Mosher. The letter is addressed to me as President of the American Park and Recreation Society and it takes issue with the definition of "parks and recreation" as stated in the APRS Code of Ethics. It reads as follows:

> "Parks and recreation provide the opportunities for leisure living which is satisfying, meaningful and necessary for the purposeful fulfillment of life: mental, physical, emotional, social and cultural. They include the leadership, services, and facilities desirable to achieve such a quality of life."

On May 24, 1971, I sent the following letter to the gentlemen listed above:

> "Please forgive the delay in my answering your letter of April 1, 1971. Your letter went to our office in Washington, was sent to me and I have been trying to run down some information to include in the letter. In order not to delay longer, I have asked Earl Gaylor to send you some names—see accompanying letter.
>
> 'We appreciate receiving your thoughtful comments, especially the proposed definition. A copy of your letter had been forwarded to our Advisory Committee on National Issues and Policies for review and recommendation. (Earl Gaylor is Chairman.)
>
> "You will be interested to know that about 200 APRS members participated in drawing up the Code of Ethics. All State Societies were involved, including CPRS. (Earl will send you names.)
>
> "Part 4 of the Code provides for amendments as follows: 'Upon written request to the APRS Executive Secretary by five percent (5%) of the voting members, or by a majority vote of the Board of Directors, amendment(s) to the Code of Ethics are to be submitted by mail ballot to the voting membership of the society . . . '
>
> "Work on the Code of Ethics was initiated by the APRS Board in the Fall of 1969. The Code was unanimously adopted in the Fall of 1970, and mailed out in March, 1971.
>
> "Again, thank you for you letter."

Thank you for printing the letter as it opens up new lines of communication and give APRS an opportunity to share its ongoing work with many new people. I hope you will be able to find some space for at least a portion of my reply. HENRY T. SWAN, President, National Recreation and Park Assn.

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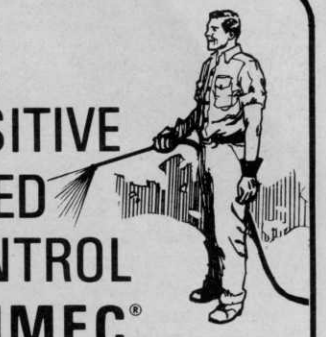

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WATER WELL MANUAL: A practical guide for locating and constructing wells for individual and small community water supplies by Ulric P. Gibson, Executive Engineer, Water Supply, Rural Areas, Ministry of Works and Hydraulics, Guyana, and Rexford D. Singer, Associate Professor of Environmental Health, School of Public Health, University of Minnesota. 1971—156 Pages—Illustrated, Paper, $5.50.

Ground water is one of our most important natural resources. Its proper development by means of wells is a matter of considerable interest. This book covers the fundamentals of the occurrence and movement of ground water; the location, design, construction, and maintenance of water wells; pumping equipment; and sanitary protection of ground-water supplies. Written in a clear and easy-to-read manner, the book contains more than 100 illustrations.

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WATER WELL MANUAL was originally published by the Agency for International Development of the U.S. Department of State to assist people living in the developing countries of the world who are without adequate supplies of good quality water. Because of the paramount importance of this subject to everyone, Premier Press is pleased to make this book available for distribution on a world wide basis.

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Water well contractors, equipment manufacturers, and suppliers will find WATER WELL MANUAL a useful book to distribute to present and prospective clients. Ground water is often regarded as an unseen and therefore an unknown water source by the lay public. This book will do much to dispel this impression and to promote an understanding of how ground water occurs and is developed. On orders of five or more copies, the book is available at $4.95, a discount of ten percent.

insect report

TURF INSECTS

MEADOW PLANT BUG

(Leptopterna dolabratus)

MISSOURI: Adults collected in Sullivan and Linn Counties. These are new county records.

WESTERN TENT CATERPILLAR

(Malacosoma californicum)

OREGON: Light to moderate on bitterbrush in central Jefferson County. About 30 percent of plants examined at one locality 1-5 active tents per bush. Two percent of bushes completely defoliated. Tents also noted along highway north of Bend, Deschutes County. Late instars present.

INSECTS OF ORNAMENTALS

BAGWORM

(Thyridopteryx ephemeraeformis)

MARYLAND: Second instars active throughout state. Heavy on junipers and deciduous plants. TENNESSEE: Caused severe damage to planting of white pines for Christmas trees in Hamblen County. Trees 4-5 feet tall with top 2 feet of each tree dead. Immatures feeding on needles, bark, and woody portion of trees. Damaging white pines and junipers in Franklin County. Heavy on cedars in Fayette County.

HOLLYHOCK WEEVIL

(Apion longirostre)

KANSAS: Adults found on hollyhock in nurseries in Wabaunsee, Cloud, and Saline Counties. These are new county records. MISSOURI: Adults collected at Eldorado Springs, Cedar County. This is a new county record.

TREE INSECTS

JACK PINE BUDWORM

(Choristoneura pinus)

WISCONSIN: Severe defoliation occurred in portions of six townships in Douglas and Bayfield Counties. Infestation covers 20,000-30,000 acres.

SPRUCE BUDWORM

(Choristoneura fumiferana)

MAINE: Pupating in southeast area. Survey shows pest over much of spruce and fir area of state from Calais, Cooper, and Robbinston to Baxter Park and Upton. PENNSYLVANIA: Heavy on hemlock, many trees completely defoliated in Centre County; heavy in Elk and Cameron Counties. MICHIGAN: Larval feeding completed in Upper Peninsula, damage evident; pupating. Damage very heavy again this year in Michigamme area of Marquette County. Aerial survey of infested area to be made.

FRUITTREE LEAFROLLER

(Archips argyrospilus)

PENNSYLVANIA: Peak moth emergence observed; damage unusually severe on ornamentals and shade trees in central areas.

PINE LEAF CHERMID

(Pineus pinifoliae)

MAINE: Eggs hatching on white pine needles; nymphs settling on 1971 shoots.

classifieds

When answering ads where box number only is given, please address as follows: Box number, c/o Weeds Trees and Turf, 9800 Detroit Ave., Cleveland, Ohio 44102.

Rates: "Position Wanted" 10¢ per word, minimum $3.00. All other classifications 20¢ per word, minimum $4.00. All classified ads must be received by Publisher the 10th of the month preceding publication date and be accompanied by cash or money order covering full payment. Boldface rule box: $25.00 per column inch.

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Due to the death of my husband I will sell omp.ete line of tree equipment, business and 3 ac.es.

Located on Highway 23, Ottawa, Illinois. $49,000, $9,000 down — will take contract for the balance. Phone 815 932-4209 evenings.

SPRAY AND TREE SERVICE—Illness forces sale of fast growing but stable business. Regular four time per year customer route. Very modern equipment. $34,500.00, terms. Write: George DesBrisay, 333 American Bank Bldg., Portland, Oregon 97201.

USED EQUIPMENT

VERMEER model 18, series 188, $2,800.00; 1968 Asphundh 16" 8 cylinder chipper, $3,600.00; Hardie sprayer 35 GPM (as is), $300.00; 1968 5T Alenco crane with 60' boom extension on Ford chassis, $12,500.00. Osborne Bros. Tree Service, Mentor, Ohio 44060. Phone 946-4355.

FOR SALE — Sky Worker 50 foot working height. Model 1044A, mounted on 1966 F-600 Ford truck. Actual miles, $10,000, good condition, just checked over at factory. Glenn Sowers, Jr., P.O. Box 74, Sycamore, Ohio 44882. Phone 419 927-9752 after 6:00 P.M.

FOR SALE: 7 gang Roseman mowers, $1150.00; 13 gang Roseman, $2100.00; 18" Ryan sod cutter with Rollryder attachment, $795.00. Foulkes Sod, Fall River, Wisc. 53932. Phone 414 326-5267.

POSITIONS WANTED

AGGRESSIVE young man desires position of assistant or superintendent at a golf course. Has associate degree with majors in outdoor recreation and soils. Honors graduate. Four years seasonal employment. Draft exempt. For resume write William Lamers, 250 S. Willow St., Kimberly, Wisc. 54136.

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Pine Tree Rinse *(from 11)*

Pinus halepensis and Pinus radiata. High calcium content of the Colorado River water is a contributing factor to the weakening of these trees, making them susceptible to infection with red spider mites and borers. Varied efforts, including sprays, fertilizer, and acidification of the soil, to bring these trees back to health have had little success.

George Kempland, Park Supervisor for the City of San Diego, hit on the idea of using the city fire department's snorkel truck to wash the grit covering some 100 pine trees in Presidio Park.

"I heard that the snorkel was used in periodic drills in a parking lot of Balboa Park," said Kempland. "I thought instead of just wasting the water that it could be used on the trees in the park. We need the snorkel because the pine trees are tall." Operation Hose Down thus became a coordinated effort of park maintenance and fire department personnel.

"The trees washed are located in lawn areas and most water was absorbed," noted Kempland. "Water which did fall on paved areas ran into canyons and was also used."

Clear water was pumped. It fell from the trees black, rinsing both grime and dead needles, plus other accumulated debris. Rainfall in the San Diego vicinity being moderate, the washing did more cleaning than the heaviest rainfalls.

"Trees took on an immediate healthier appearance and showed a noticeable growth within 30 days," said Kempland. "We anticipate using this system in late summer and again in early fall. If repeatedly successful, the operation could be expanded throughout San Diego's city parks."

James R. Garinger, a captain in the San Diego Fire Department, explained the operation from the fire department's point of view.

"We decided to use the snorkel rather than the aerial ladder truck because of the better maneuverability of the snorkel as a water tower. You have to set up a nozzle and hose on the aerial ladder, where on the snorkel the water tower is permanent," said Capt. Garinger. "You just connect the hose at the base of the snorkel."

"We asked George Kempland to stop us if he thought we had too much pressure, doing more damage to the trees than good," said Capt. Garinger. "It worked out fine, each fireman got a chance to control the nozzle and move the snorkel basket around. This was good training and water served two purposes —training and maintaining trees.

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Trimmings

GASES, combined in a mixture at low total concentrations may cause more plant damage than a single pollutant at a much higher concentration. Ohio State University researchers are studying this peculiar problem and another closely associated with it. In the second case, clues are being sought as to why pollutants make plants more susceptible to attack by insects and pathogens such as fungi and bacteria. Seems these seek out plants weakened by chronic pollution stress.

* * *

CONDEMNED ELMS in Stockholm, Sweden, failed to fall on schedule. Ax-wielding workmen were repelled by tree lovers and needed a police escort in order to retreat. Most serious threat, however, was a series of anonymous calls threatening to chop down fruit trees in the backyards of councilmen if the elms were destroyed.

* * *

OZITE known for the indoor-outdoor carpet craze has marketed a grasslike artificial turf. It's more carpet than turf and isn't meant to compete for the athletic field business. Company reps say that Lawnscape (the new sale name) was created mostly for do-it-yourselfers on yards, balconies, basements, patios, around swimming pools and the like. The company, however, doesn't rule out its use in the commercial field.

* * *

RACEHORSE OWNERS have complained that Saf-T-Turf at the Calder Race Course (Fla.) is making their horses sore. Heavy investor in the Calder set-up, William L. McKnight, is not about to cover the artificial surface with sand, or whatever. He instead hopes to sell the 3-M company's product as the racetrack of the future. Top stables may reconsider competing at Calder this winter.

* * *

MORE FERTILIZER USE, NOT LESS, is being promoted by Extension Professor R. Hunter Follett at Ohio State University. He says that greater use of fertilizers can reduce erosion and help prevent pollution. Instead of exposing more land to erosion and nutrient losses, Dr. Follett suggests increasing fertilizer use on better land where erosion hazards are low, and retiring more poor land to permanent cover.

Highway Tree *(from page 14)*

surgery should be performed if the situation necessitates.

Where utility lines are located along highways, it may be necessary to prune and control the growth of trees on a more regular basis. Yet, when the coexistence of trees and utilities is feasible mutual benefits are frequently possible. Trees help to hide some of the unpleasant visual qualities of utility lines and poles. They also provide a wind screen and protection from the elements for the utility lines. And, because proper functioning of the utilities necessitates regular pruning of trees to prevent service interruption, diseased and dead wood is eliminated which could prove to be a danger to motorists.

Today our trees are faced with many man-made problems. Chemical applications applied to our highways and off-highway maintenance areas, such as salts used as deicing compounds, herbicides and soil sterilants, oils, and other toxic materials which either wash or blow off the highway onto plants and under the trees and grounds surrounding them cause their death.

In many cases it would be advantageous to remove these trees which would have a tendency to die or be killed by unnatural surroundings. Many areas of our country have not been blessed with enough rainfall for a period of several years, therefore these trees have been weakened and are susceptible to insect and disease attack. Healthy trees need care and a maintenance program that stimulates growth through the application of nutrients, preventive sprays where known insects and disease are prevalent and tree sanitation are greatly needed.

Consideration must also be given

Robert A. Bartlett, president of the F. A. Bartlett Tree Expert Company.

to the effects of air and water pollution upon highway trees. Trees, like most living things in the environment today suffer from pollution. The effects of pollutants on trees are numerous and the most serious symptoms are clearly evident in urban areas. The ultimate solution to this problem lies with the polluters and legislators, although research is now going on in several parts of the country to determine which particular species of trees are most tolerant to pollution. When this research is completed, we will be best able to determine what trees should be planted in areas of high pollution.

Recommendations

1. **Initiate a Comprehensive Highway Tree Census and Continuing Tree Inventory.**

A highway tree census should be started. This census should be repeated at least every ten years.

Shocking!

We are dismayed at the d-CON ad in the July '71 issue of **Ladies Home Journal,** p. 146-147.

This ad by a reputable formulator shows a picture (taken by a National Audubon Society staffer) of 210 dead birds which are purported to have been killed by a "hard" pesticide.

There are no data to substantiate the claim. No data explain whether the birds were picked up along a highway or in a park, or whether there was an autopsy to indicate why they died. The so-called "hard" pesticide was not named.

Nor does d-Con mention that they market a rodenticide which would kill most anything.

We are shocked because this type of reporting is a disservice to the industry—an industry which is spending more money than ever before to monitor and research the effect of chemicals on the environment, including that on birds.

The census should determine the following:

A. The severity of tree ills and those problems of immediate concern.

B. The manpower and equipment necessary for an effective program.

C. The money required.

D. The suitability of tree species planted or to be planted.

2. Develop a Master Highway Tree Plan

This plan should integrate economic, aesthetic and ecological realities to form a practical program of landscape design. It should also develop immediate, intermediate and long range goals which are flexible enough to change if necessary.

3. Maintain Mulch Around Trees

A mulch around highway trees creates biological conditions which favor healthy growth.

All leaves, wood chips, grass clippings, and other suitable organic matter should be composted for use in the planting and maintenance of highway trees.

5. Establish a Program for Aerating and Adding Organic Matter to the Soil.

Highway trees should be fed each three or four years if maximum vigor is to be maintained. Where feasible, a combined operation of aerating and adding organic matter using a power-driven coring aerator is recommended.

Establish the following feeding priorities:

A. Trees that have been weakened by insect or disease attack.

B. Trees showing poor growth.

6. Establish a Three-Year Pruning Cycle.

A three-year pruning cycle should be the longest period allowed between prunings if highway trees are to endure the rigors of their environment. If this is a shorter period than usually allotted, it must be remembered that this will require less man hours and thus will be lower in cost.

7. Establish a Realistic Tree Removal Policy and Program.

The program should remove the following:

A. Dead and/or dying trees.

B. Unsightly trees which have no chance for future development.

C. Trees that represent potential hazard due to growth habit, structural weakness or internal decay.

D. Trees that have outgrown available space.

8. Water Trees During Period of Drought.

Priority should be given to trees planted within the past three years and water should be injected into the soil if possible.

9. Expand the Program for Controlling Insects and Disease.

Spray programs should not only be aimed at a specific pest or disease that threatens highway trees yearly, but should also be able to control sudden outbreaks of infestation. Since this might result in work loads beyond the capacity of existing crews, the following should be considered:

A. Rent additional spray equipment for short periods.

B. Contract some of the work with qualified tree expert companies.

C. Evaluate new methods and techniques such as application by helicopter.

If we fail to follow through with these programs for the maintenance of our highway trees, we could eventually be left with highways resembling a concrete and asphalt wasteland.

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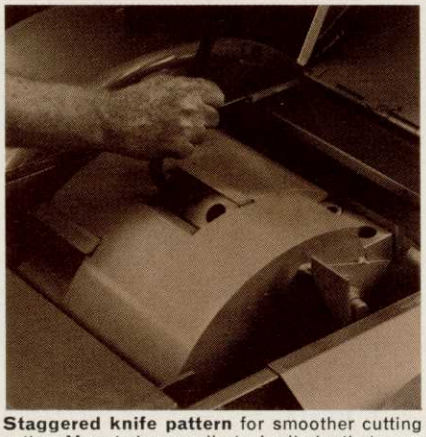

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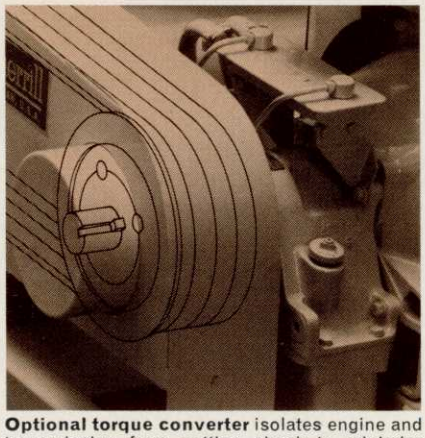

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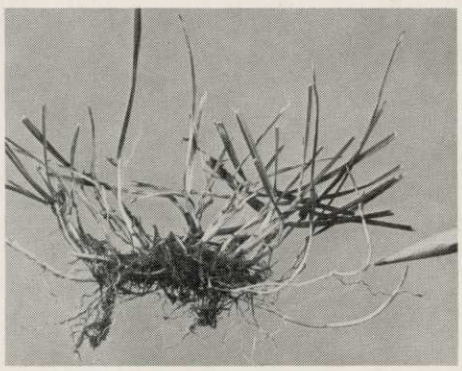

Baron, new rave in bluegrasses. Pencil points out to one of the abundant rhizomes from a culm cluster only 8 months old.

Dr. C. R. Skogley examines a strip of Baron sod.

Dr. C. Richard Skogley, Professor of Agronomy, Plant and Soil Science at the University of Rhode Island, reports: "In America, Baron has perhaps been grown longer on the proving grounds at Rhode Island than at any other locale and has performed exceedingly well in our trials. It has consistently rated among the best. It resembles Merion in many respects but seems less subject to dollarspot and less demanding of fertilization. So far we have seen no stripe smut, and leafspot incidence has been light." Dr. Skogley has recently released from the University three new improved varieties of grasses (namely, Jamestown, Red Fescue, Exeter Colonial Bentgrass and Kingstown Velvet Bentgrass).

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